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## ORIGINAL ARTICLES.

### THE ARID REGION OF THE UNITED STATES FOR PULMONARY TUBERCULOSIS.

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SERVICE.

I TAKE an opportunity in this paper to answer the great many inquiries that have come to me from physicians and others by giving information through the MEDICAL NEWS direct to physicians relative to this section as a climate for their consumptive patients. As I have no local interest I can probably speak without coloring my statements with Western prejudices.

What actual knowledge I possess of the arid region has been gained by a residence here this summer, last spring, and last winter, during which latter season I was sent through Arizona and New Mexico to inspect Government reservations for the purpose of recommending the selection of a site for a sanatorium for consumptive patients of the Marine Hospital Service. In this connection I wish to call attention to some of the points of interest which impressed me while on this trip, and which may be useful to the physician in sending his consumptive patients out here for the climatic cure of the disease.

First and last, I am firmly convinced that any part of Arizona, Colorado, New Mexico, Mexico, or Western Texas above 2000 feet elevation is as good as another part for the acute case without complications, other things, of course, being equal, such as proper food, etc. I know that a large percentage of such patients sent here rapidly and permanently recover. Let me emphasize that for men in the acute stage one place is as good as another in the sections named so far as altitude is concerned. If the patient has friends, or if it is known that he can obtain all the necessary care at any particular place in the sections above named, let him be sent there. For women, those in an advanced stage and those with a tendency to hemorrhage, care must be exercised to select a site at a medium altitude; patients with stenosis must never go to a high altitude.

I believe that for the average patient the climate of El Paso is as good as that of Colorado Springs; Albuquerque as good as Fort Stanton; Tucson and Phoenix as good as Prescott; Chihuahua and Aguas-

Calientes as good as the City of Mexico. These places represent the average of each section, and if the physician has a patient in either, and he has all the other absolutely necessary requisites for his comfort, care, proper food, and peace of mind, then one need not worry, for all will have been done that can be done. I have met numbers of patients out here who have tried each place, and, of course, wherever one began to improve that was the place of all others. It is surprising what a vast fund of knowledge relative to climate, rainfall, altitude, and a thousand other unnecessary things these poor unfortunates pick up. I recall a case in Phoenix which I found to be fairly typical of the consumptive sent out to this country. This man, who was just ahead of me at the ticket office, interested me by calling for a ticket to Chicago, and seeing that he was very sick with tuberculosis I naturally made an opportunity to speak to him and inquire why he was returning to Chicago. He explained that thirty-three days before he had landed at Albuquerque, and as he could not notice any difference after a week's stay there, and being told that it was too high, he went on to El Paso, and from there still lower to Tucson. As I was much impressed with that beautiful little city, I asked him why he left Tucson. "Oh," he said, "it was too dry, and they have such awful dust storms." I asked him how many storms they had while he was there, and he said only one, but he knew he should die if he had to live through another. So he had come to Phoenix, and was leaving there because the place was ruined by too much irrigation of the alfalfa fields, and was, therefore, too wet.

Who was responsible for sending this poor, foolish man out here without sensible instructions to aid him to bear up against all the natural drawbacks to be found in a newly settled country? If one expects the climate to do all he will be woefully deceived. If the cases are diagnosed early and the patient sent here promptly, I believe at least eighty per cent. will recover with out-door life, good food, and attention. Of course many patients will recover with only climate as an aid in spite of all hardships. Truly, though, I have been unable to find many of these.

Do not fail to impress upon your patient that he is to come out here to make it a business to get well. He must understand that the towns are small,

nearly all the hotels poor, and the boarding-houses even worse. There is very little beautiful scenery outside of Colorado. There is much that is dry, brown, dusty, and some that can be called grand though somber. The barrenness of the arid region in Arizona and New Mexico is appalling to the newcomer. The monotony of the ever-present sunshine, the dust, and the high winds make the sick and the well long for a drop of rain; and then add to this poor food and unsatisfactory accommodations, and it requires some courage on the part of the patient to remain here. Then let it be understood that coming here is a serious business, and that the stories of hunting and fishing (the latter especially) and other sports are exaggerated, and generally entirely untrue. Then, too, in all arid regions of the world dust and winds prevail, and I can see no reason to deny that there is a great deal of dust and high winds all over the sections under discussion. Let it be understood that there are many unpleasant features, and the disappointment will not be so great.

The consumptive must not come here believing that it is warm just because there is so much sunshine. At Las Cruces last January it was a little too warm at mid-day for long walks, while in the evening one required a heavy overcoat, and at night heavy blankets. There is a very marked difference between the midday and midnight temperature, and it is absolutely necessary to come prepared for cold weather, and flannels will have to be worn all the time.

I have noticed one thing out here which is very disgusting, and that is that the pillows and bedding have the odor of perspiration so peculiar to the consumptive. Every health-seeker should buy pillows and blankets and carry them wherever he goes if he desires comfort and cleanliness. Every place seems to have the abominable cotton-padded "comfortables," which cannot be and never are washed. In a large hotel I found that I had to spend a night under one of these foul things, and I noticed next morning that it had several large spots of dried sputum on it. If one wishes to feel comfortable and be free from disgusting odors let him carry his own pillows and blankets. Besides, if one always has the same covering there is not so much danger of catching cold.

Never believe that the room offered to you has been properly disinfected; also, never believe that a consumptive has not preceded you. I call attention to this for I believe that many persons with mild cases become reinfected here by occupying rooms which were formerly in possession of persons ill in the last stages, and I have heard of a few individ-

uals who had come out with relatives and later contracted the disease, probably by occupying infected rooms.

Physicians should especially direct their patients in the management of the sputum. I never dreamed that man was such a filthy animal until I visited Tucson, El Paso, and the other places where consumptives go by hundreds. I never saw anything more disgusting than the walks in the plaza at El Paso. The efficient president of the Board of Health of that city has made many enemies and brought a great deal of abuse and ridicule upon himself by fighting this dangerous nuisance, and at last he has succeeded in having a law passed forbidding spitting in the streets. I believe he has sufficient temerity to enforce the law. At any rate, it is our duty to aid him by careful instructions to our patients. The patients should be taught not to cough in public places, and to use the sanitary sputum-cup or pocket-bottle.

There has grown up in the Western country a spirit of exaggeration in respect to each locality that, to say the least, borders on the untruthful. Each place has all the virtues, while its nearest neighbor is nothing but a death trap. The expression is often heard that no consumptive was ever known to get well there. Even the doctors join in such silly expressions, and often display a spirit that I am sure is engendered by their own local interest. I am sorry to say this, but I believe it to be true. Especially is this true of their actions toward places of different altitudes from their own. Then, too, wherever one goes every citizen can tell you the average rainfall of his section for years, and he is ever ready to direct your attention to the statistics of other localities that are wetter, but never to those that are dryer, for his desire to furnish you with necessary information never reaches that far.

The places mostly frequented range between 2000 and 7000 feet in altitude, and some are as high as 8000 feet. The greater the altitude the greater the rainfall, and consequently the less dust and more luxurious vegetation; the lower the altitude the greater the barrenness and prevalence of dust storms. Don't let your patients worry about the rainfall, for there is practically none in winter anyway, and in summer what falls is in down-pours which runs away or is rapidly absorbed. The country would be much better if there were more rain.

I want to impress upon physicians the importance of mapping out to their patients the different discouraging problems which they are sure to encounter. I have taken every opportunity to talk with the doctors and consumptives out here for the purpose of ascertaining their trials and hardships.

In a few instances I have found patients who were here under full and intelligent instructions, and who were ready to laugh at the bad food and discomforts, and were making it a business to get well. It does one good to meet with some patients sent out by doctors with sensible directions, even though in nearly every case these doctors have never been here. These are the patients, too, that are doing so well, and in each the diagnosis had been made early.

There has grown up an absurd idea that individuals with destructive valvular lesions cannot live in any altitude above 2000 feet. A little thought will convince one that the average lesion case without stenosis will do even better here than at the level of the sea, especially if compensation has taken place. I have failed to examine one consumptive here who has not referred to his heart and asked if I thought it would stand the altitude. I have examined a few patients who had been directed to leave the high altitude and go lower "on account of their hearts." There was nothing the matter with their hearts except in two instances, and these had irritable hearts from too liberal use of tobacco and coffee. Even the well person cannot smoke and drink tea and coffee with impunity without a feeling of fulness and distress in his chest. This is especially marked at an altitude of 5000 or 6000 feet. I believe much of the dizziness and fulness of the head at high altitudes is due to the use of coffee, tea, or tobacco.

Pulmonary hemorrhage is a question about which I am unable to offer any positive opinion, but one which I have investigated carefully. Physicians residing in the greater altitudes deny that their patients are any more likely to have hemorrhage than at a much lower level. I cannot very well believe that, for the reason that the higher one goes the greater is the relative action of the heart. That is plain, for as we take off the air-pressure we are lowering the "governor," and the heart's action is accelerated and will "race," for there being less air-pressure there is necessarily greater relative pressure from the arterial tension. It seems, then, that if the wall of a blood-vessel were already weakened there would be danger for the consumptive to go at once to a high altitude; therefore, if the patient has shown a tendency to bleed and there is a cavity present, I would suggest that he be started in at a medium altitude and gradually ascend.

Tubercular pneumonias involving small portions of the lung are quite common, I am told, and I believe are more often noticed in high altitudes than in lower ones. The newly infected area softens rapidly and a cavity forms at that point.

Consumptives with large cavities rarely recover if

they have high temperatures and the cavity is infected with the staphylococcus. It is admitted by all that these patients seldom if ever recover in an altitude above 5000 feet. One of our large sanatoriums here refuses to accept such patients, but it is the unexpected that often happens in such cases. I know a woman with a cavity as large as an orange, and one can hear the gurgling in this cavity two feet away, and yet she has gradually improved, and I think will recover. She has been here three years in an altitude of 3800 feet. I also know a man with a cavity the size of a lemon, stuck up against the anterior wall of the thorax like a swallow's nest. He has no other trouble, but still expectorates bacilli from this cavity. His case dates from 1867. Most of his time has been spent in El Paso, but he has also lived in Colorado at a greater altitude. I merely mention these cases to show that some of the patients so afflicted do get well, though they are few.

The physician in the East must be very careful in sending women here. Women often have irregular and scanty menstruation as the first symptom of the disease. Almost surely if they are sent to altitudes above 3500 feet they begin to menstruate freely and often dangerously. There are few women who are not troubled in this way when they first come here. I have heard of some who began to menstruate regularly after going to a high place. I think, however, that this was due to the general improvement of their health. I knew one young girl who usually had a hemorrhage from the lungs at the menstrual period, though she had no sign of uterine flow. She had a large cavity, and has nearly recovered.

Nearly all women are very nervous during the first few months of their residence here. They are highly apprehensive of impending danger, especially during high winds and dust-storms, and one expressed her feelings very clearly by saying that she had an almost overwhelming apprehension of the heart. Men have this feeling also, but not to such an extent. I am in absolutely perfect health, yet even now if I drink strong coffee or tea I have a very disagreeable sensation in my chest. It is nothing more than the heart going too fast for aeration of the blood. This can be stopped in half an hour by walking for that time and then lying down.

Women also have dyspepsias worse than men, and they do not sleep so well. With them, also, constipation is hard to control. High winds cause the air to become electric, and then one is stimulated and is buoyant. The dry air seems to drive away the blues even of the sourest patient. I notice that the consumptive here is more hopeful and happy than in the East.

If the diagnosis is made early, before complications have taken place, I believe that eighty per cent. at least of the patients sent here in that stage will recover. A great many who appear hopelessly sick at the East will also recover or the disease will be arrested. In spite of the dust people with laryngitis improve wonderfully in a short time. While at Las Cruces last December I played ball with two young men, one of whom had been brought to that place on a stretcher fourteen months before. While at college he had eleven hemorrhages, when he contracted the disease. He promised to allow me to examine him, but I had to leave and never saw him again. He said that so far as he could tell he was perfectly well. The other case was one of twelve months' standing, and the man thought himself well, though I easily found the infected area in both apices. Near Fort Stanton is a young man following a flock of sheep. He herds them night and day, sleeping on the ground. To see him now no one would believe that a few months ago he could scarcely walk, and that only will power kept him alive. Another patient came in June and camped near the Reservation. He had a large cavity and mixed infection. He could not walk. Now he has very little fever, and rides and walks a great deal. It remains to be seen if this patient with mixed infection will eventually recover at an altitude of 6126 feet. These are only examples of nearly one hundred cases that I have seen incidentally, and some patients who have been here a number of years show no signs of the disease, and I have to take their histories for the correctness of the diagnosis. One can hardly believe that they were tuberculous and had recovered.

In the case of extensive dry pleuritic adhesions of both lungs, as a complication, I am told the patients invariably die when at an altitude above 2000 feet. All women should start in at an altitude of about 3500 feet, and ascend if they have no complications. Patients with a tendency to hemorrhage should not go to high altitudes. Persons with valvular lesions as a complication should be started in at a low altitude because very little exertion will set the heart racing and badly frighten them in spite of the explanation that there is no danger. Persons with stenosis should never be sent above sea-level. Physicians are advised to keep their bed ridden patients at home to die in peace. This country is bad enough to live in, and it certainly is hard to die here. It should not be forgotten that the trip is hard for a well person; for the sick it is a hardship. Individuals with one side badly affected and large cavities should submit to the Murphy operation before being sent out. If such are sent to places as low as Phoenix and Tucson there is a good chance

for them to recover. If the patient has big cavities on both sides he must not go above the level of San Antonio, Tucson, or Phoenix, and even at these places the chances are against him.

Colorado is so well known I shall not attempt to name any place in that State. Arizona, New Mexico, and Western Texas are the parts of the arid region that I think are most desirable. As I said before, one place is as good as another in this region as far as the climate itself is concerned. For those in the acute stage the climate alone will cure most of them, and therefore it makes very little difference where they go. For those in whom the disease has advanced sufficiently to give rise to high fevers and dyspepsia, and who are easily chilled by the least exposure to cold it is necessary that the very best cooked food and attention be given. It is this class of patients which has aroused my solicitude especially. I have seen a number of them die and know that a great many die that should have been saved. A large percentage of these unfortunates obtain the glaring advertisements of some place with a Spanish or Indian name and are induced to try its extolled virtues. Their disappointment is woful. The food and lack of attention would make the well sick. Patients should be kept from the small Western town and from the ranch. There is not one ranch in five hundred where one can obtain a palatable meal. With thousands of ranch-cows about one rarely sees milk or butter at one of these places.

This arid region, which includes a large section of Mexico, has been pushed up, as it were, from 2000 to 8000 feet above sea-level. The climate has been changed and modified to such an extent that it is entirely different from that which one would notice merely by going up a high mountain. With a temperature of more than 90° F. in the shade one does not perceptibly perspire. The air is full of electricity. If I had the choice I should prefer to have consumptive patients here in summer rather than in winter. I believe it a great mistake to send patients here in winter and allow them to return East to spend a miserably hot summer, losing all they have gained. The consumptive will flourish in dry cold and succumb to moist heat. I have yet to see more delightful weather than that of last spring and summer, during which time I was at El Pasco, in the Tularosa Valley, and here at Stanton in the Sierra Blanca region. In the Rio Grande and Tularosa valleys the sun is blazing hot, and yet there is nearly always a breeze and one can find comfort in the shade.

Here at Stanton the spring, summer, and so much of the fall as has passed have been absolutely perfect. No one could find anything to add to it. The

record for more than twenty years shows mild winters with high winds in February, March and April.

Let me again advise against sending patients to small towns. El Paso, Phoenix, Albuquerque and Tucson are bad enough. Even in these towns with few exceptions there are no first-class, up-to-date hotels. In El Paso with its enormous transient travel and its large amount of business there is only one medium class house worthy the name of hotel; and there is not one good restaurant. Albuquerque has recently lost its fine hotel by fire, and now there is no place for the wealthy consumptive to go to in that city, for no one would tolerate the hotel accommodations there if he could help it. Phoenix has a very nice hotel in the Adams House. At Eddy there is a fair hotel, but I am told that the dining service is miserable. At Tucson there was a nice little hotel, but I hear that the proprietor has moved to El Paso. It is to be hoped that El Paso will gain by this change.

Las Vegas Hot Springs is probably the best place for the patient with means. There is a large sanatorium there, run on the hotel and cottage plan. A consumptive can go there and spend the entire year in comfort. The Catholic will find at El Paso the Hotel Dieu, a modern, up-to-date hospital and sanatorium of which he can well be proud. Ground has just been broken at Roswell for a sanatorium and it promises to be a great success. Roswell is a coming town. At Alamogordo I found the most comfortable hotel in Arizona or New Mexico. It is a small house, but clean, and the dining service is excellent.

It thus practically resolves itself to the necessity of the consumptive procuring board with private families, keeping house, or having miserable rooms with miserable meals at miserable restaurants. I want to make one exception in regard to restaurants, and that is, wherever there is a Harvey eating house one will get first-class meals. Harvey makes a business of superintending the meal service on the Santa Fe system, and his meals are excellent.

In El Paso I know of only one good boarding-house. In Albuquerque there are said to be several. Patients reaching any town had better go to a European-plan hotel and get meals outside. They can then inquire for and find boarding-places. Examine the railroad cards and if any place has a Harvey house, go there. A woman can always feel safe in going to a Harvey house.

Throughout Arizona and New Mexico one will find society of the best sort. The pulpits are often filled with educated and refined ministers here for their health. It is the same with all the professions, and one need not fear that he will not find cultured

and refined people, for they are everywhere though they are sick. The poor man must come prepared for exorbitant charges. From the start he had better have his own home or be sure of his friends. All kinds of attractions are held out to settlers, but one must bear in mind that a farm cannot be commenced here for a small sum as water alone is a big item of expense. There is not a drop of water near irrigable land in either Territory not already preempted. The digging of wells is usually a costly experiment. The well-to-do can always make a home with sufficient comforts.

#### DIRECTORY.

Las Vegas, N. M. Hotels fairly good. Boarding. Patients can remain winter and summer. Altitude, 6418 feet.

Las Vegas Hot Springs, N. M. "The Montezuma;" good attention of all kinds. Patient can rent a cottage and have meals in the main dining-room. Hot baths. Patient can remain all the year. Advanced cases not received. Altitude, 6709 feet.

Santa Fé, N. M. Hotels only fair. Boarding. Greater number of clear days than any place in New Mexico. Summers perfect. Patients can remain all year. Altitude, 7047 feet.

Albuquerque, N. M. Hotel accommodations poor (fine hotel just destroyed by fire). One good restaurant where ladies can go. Boarding. Fine drives. Patients can remain all year. Has best altitude, 5000 feet.

Las Cruces, N. M. Very poor hotel. At the "Alamada," three miles out of town, one will find good meals, though other accommodations are very poor. Part of the year very hot. Winter perfect. Must make arrangements by correspondence before going there. Altitude, 3797 feet.

El Paso, Texas. Several European-plan hotels (others being built). One good boarding-house. Good driving. Fine business town. Good place for the workingman. Summers very hot. Winters perfect. Altitude, 3720 feet.

Deming, N. M. Fair hotel, but good meals. Beautiful country. Small town. Can remain all year. Altitude, 4327 feet.

Hudson Hot Springs, N. M. (near Silver City). Sanatorium. Said to give good care and attention. Can remain all year. Altitude about 5000 feet.

Tucson, Ariz. Beautiful old Mexican town. Beautiful drives. Fair hotels. Boarding. Hot in summer. Delightfully warm in winter. Patients should leave there in summer. Altitude, 2392 feet.

Phoenix, Ariz. Beautiful city. First-class hotel, "Adams House." Boarding. Nicely kept streets

and beautiful drives. Patients should leave in summer. Altitude about the same as that of Tucson.

Prescott, Ariz. Hotels poor. Summers delightful. Altitude about 5000 feet.

Flagstaff, Ariz. Fairly good hotel. Small town. Beautiful country adjacent. Grand Cañon of the Rio Grande sixty miles away, and the San Francisco Mountains nearby with an altitude of 12,000 feet. Fine summer excursions. Altitude of Flagstaff 6862 feet.

Alamogordo, N. M. Hotel first class, though small. Small town, eighty-six miles from El Paso. Hot summer. Stopping place en route to Cloudcroft. Altitude about 4400 feet.

Cloudcroft, N. M. Fourteen miles from Alamogordo in the Sacramento Mountains. Six thousand feet elevation. Used as a resort in summer by people from Western Texas. Said to furnish first-class meals. Summer resort only. Ride on mountain railroad very fine.

Eddy, N. M. Fair hotel. Small town. Altitude about 4000 feet.

Roswell, N. M. Poor hotels. Boarding. Will have a fine sanatorium for consumptives, to be opened this winter. Hot summers; delightful winters. Beautiful drives. Surrounding country good for the poor man to get a start. Altitude about 4000 feet.

#### STEATOSIS OF THE LIVER AND COAGULATION NECROSIS; A FURTHER CONTRIBUTION TO THE YELLOW-FEVER DISCUSSION.

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DRS. REED and CARROLL, in their recent article in answer to Professor Sanarelli, stated that a complete report on the comparative experimental pathology of bacillus icteroides and bacillus cholerae suis would be formally presented by them in the near future to the Surgeon-General and would without delay be made public by him. While waiting the completion of their work and its report I have felt that there are certain points in the present controversy with regard to the specific cause of yellow fever that deserve further elucidation. These points have special reference to the steatosis or fatty degeneration of the liver that has been described as specific to yellow fever.

Drs. Reed and Carroll (MEDICAL NEWS, September 9, 1899) say: "Sanarelli speaks as if yellow fever were the only condition in which fat is found in the liver-cells. It is hardly necessary to remark that it may be present in considerable quantities in the livers of comparatively healthy individuals. Stea-

tosis may mean little or much; it does not necessarily imply degeneration." Later they say: "Sanarelli displays profound ignorance of the pathology of coagulation necrosis," and finally in their discussion of the pathological lesions found by them in the liver of a soldier who had died from yellow fever they failed to find "the acute steatosis upon which Sanarelli lays so much stress" and leave it to be concluded that it is not pathognomonic of the disease. While waiting for Sanarelli's own answer to these imputations I think it only due to his American readers to point out a rather obvious answer to them and at the same time to give certain details of some work on the subject of fatty degeneration during which I had the privilege of being present in his laboratory at Montevideo.

I must say that Drs. Reed and Carroll's declaration seems to assume on their part no very extensive acquaintance with Sanarelli's work during these last few years. For instance, as regards the first assertion, that Sanarelli thinks that fat is produced in liver-cells only in yellow fever, he published an article in the *Centralblatt für Bakteriologie*, No. 10, page 382, in which he tells of observations made on fatty degeneration as produced by various infectious diseases. It is preposterous to assume his ignorance of a subject like this since, of course, it is well known that steatosis may occur from a large number of causes and that it may be entirely physiologic and not due at all to pathologic factors. It occurs in animals as well as in men without positive disease as the well-known artificially produced fatty goose livers (*foie gras*) of the table testify. Besides other lesions fatty degenerations of liver cells are produced by practically all of the infectious fevers. Hemorrhagic smallpox causes a distinct hepatic steatosis, typhoid fever and cholera are associated with a certain amount of it, and the diphtheria toxin is noted for having an intense steatogenic power.<sup>1</sup> Above and beyond all these, however, is the specific steatogenic power of the bacillus icteroides, its power of producing an intense fatty degeneration of the liver cells of its victims. This degeneration is so widespread and so acutely produced by the bacillus icteroides that it can only be compared with three other processes, namely, the fatty degeneration of the liver found after actual yellow fever, that noted after

<sup>1</sup> Besides bacterial toxins there are, of course, other poisons that produce fatty degeneration. Alcohol and lead are the most common and best known. In my forensic practice in Montevideo I once had in a boy a fatal case of poisoning with anilin oil in which icterus occurred during life and I found fatty degeneration of the liver post-mortem. To make sure for medico-legal purposes that these two phenomena, the icterus and the fatty degeneration of the liver, were really due to the anilin oil we made a series of experimental observations on dogs, using 30 to 40 centigrams of anilin oil to the kilogram of animal. Four out of five died, presenting icterus, and all five after death showed exquisite fatty degeneration of the liver.

phosphorus poison and that produced by the venom of crotalus, rattlesnake poison.

Recognizing the immense value this special steatogenic quality might have in demonstrating the etiological relation of the bacillus icteroides to yellow fever, Sanarelli in his laboratory at Montevideo instituted a series of observations to determine the amount of fatty substance that could be extracted from the livers of dogs immediately after their death from various diseases. It was at these observations that I had the privilege to assist. It was found that in any given disease the extension of the fatty degeneration through the liver substance is never constant. This is true even for the three pathological processes mentioned above which are especially prolific in the production of fatty degeneration of the liver. The hepatic cells of certain animals, even of the same species, are very differently sensitive or resistant to toxins from those of others. The age, size, and especially the breed of the dogs employed in the observation we found made a great difference in the results obtained when the animals were inoculated with the bacillus icteroides. The purer the breed of dog employed the more steatosis was produced.

Havelburg, in his report from Rio Janeiro ("Public Health Reports," November, 1898), pointed out that "the more or less rapid production of the different phases of the disease (yellow fever) is a question of the size of the dose of culture or of toxin." In conformity with this principle we found at Montevideo that the relation between the amount of hepatic steatosis produced and the amount of culture of bacillus icteroides administered was a constant one. It is possible to obtain with repeated doses an even more intense fatty degeneration of the liver than can be produced by phosphorus poisoning. It can be seen not only with the microscope but with the naked eye. The liver presents the orange-yellow color so characteristic of the livers in the cadavers of yellow-fever victims. At times in very acute cases, just as happens in phosphorus poisoning at times also, the intense congestion present obscures this yellow color, but very slight pressure causes the blood to recede and discloses the intense fatty degeneration present.

I await with some impatience the account of the manner in which Drs. Reed and Carroll will determine the comparative steatogenic power of the hog-cholera bacillus and the bacillus icteroides. The method employed by Professor Sanarelli was a very exact one. It consisted in an accurate determination by means of chemical analysis of the amount of fatty substance that could be extracted from the livers of dogs. The quantity of fat in the liver of the

healthy dog gave an average dry residue of 6.54 grams per 100. A large series of analyses of this organ after various infections gave the following results: In the liver of dogs dying from cholera the average goes up to 9.44 grams per 100. After death from infection by the colon bacillus it amounts to 10.60 grams per 100; after infection with bacillus pyocyaneus to 11.22 grams per 100; after infection with diphtheria to 14.65 grams per 100; after infection with bacillus icteroides to 22.69 grams per 100. The highest average obtained in any single observation in our laboratory was 32.72 grams of dry residue to 100 grams of the fatty substance, and this was obtained from an animal dead after infection with bacillus icteroides. A very complete confirmation of Sanarelli's results in this matter is furnished by the recent "Report of the Medical Officers Detailed to Investigate the Cause of Yellow Fever." Drs. Wasdin and Geddings report that they obtained from twenty-seven to fifty-three per cent. of fatty matter in the livers of animals that had died from infection with the bacillus icteroides.

Decoreis, in yellow-fever cadavers, in Cuba, noted 22.29 grams per 100 of dry residue from the fat contents of the livers.<sup>1</sup> Canto, at Rio Janeiro and San Paulo, in Brazil, noted 23 per 100.<sup>2</sup> Figueyra, working in Lisbon, noted 31.30 grams per 100.<sup>3</sup> To these may be added the authority of Lacerda, who is quoted by Drs. Reed and Carroll. He says in the *Revista Medica do Brasil*, 29, page 256, 1898: "We do not know another toxic substance of any kind whose steatogenic power is at all comparable to the amaryllic toxin in intensity or rapidity. Even arsenic and phosphorus do not compare with it in their power of producing fatty degeneration of the liver and other internal viscera. Only one poison seems to be in the same class with yellow-fever toxin in this, and that is crotalus toxin—the venom of the rattlesnake. The distinction between these two is that amaryllic toxin is pyretogenic as well as steatogenic, while crotalus poison is only the latter." Dr. Lacerda, in *Archives de Medicine Experimentale* for the present year, speaking of the rapidity with which the toxin of the bacillus icteroides produces steatosis, says that he has seen fatty degeneration already begun only eight hours after inoculation. Mendoza, in the *Revista Medica de San Paulo*, No. 5, 1898, says that in dogs the bacillus icteroides produces lesions identical with those produced in man by yellow fever. He calls attention especially to the fatty degeneration of the liver, the hemorrhagic gastro-enteritis, the albuminuria, and the secondary infections.

<sup>1</sup> "Traite de Fievres," Paris, 1893.

<sup>2</sup> "Febre amarilla," A. Gordinko, 1897.

<sup>3</sup> *Gazeta Medica do Lisboa*.

In the *Settimana Medica*, No. 19, p. 225, 1899, Foa says: "In the liver of dogs dying from yellow fever experimentally produced by the injection of the bacillus icteroides I found exactly the same lesions as those which I have frequently studied in yellow-fever cadavers. By means of injections of the bacillus icteroides directly into the liver parenchyma I have obtained hepatic steatosis resembling in every particular that of human yellow fever, and accompanied like it by jaundice of the tissues." Observations of the same kind might be quoted from Della Rovere, Belfanti, Bruschettini, and Cesaris Demel, men whose reputations in Italy as impartial observers are very well recognized, but I do not wish to weary the reader.

The specific steatogenic power of the bacillus icteroides has, I think, been amply established by the observations quoted in detail.

Now as to the question of Sanarelli's ignorance in the matter of coagulation necrosis. Some of his most delicate work has been done on just this subject. This from his observations on the livers of guinea-pigs is a good example: "In guinea-pigs the hepatic cell is very resistant to the toxin of the bacillus icteroides. At most this poison produces a granular turbidity of the protoplasm with certain phenomena that point to cellular necrosis, but it rarely gives rise to any characteristic process of fatty degeneration." Then in connection with the livers of rabbits he makes this observation: "The cellular stroma is often compressed and reduced in size. In certain portions the protoplasm of the cell is rendered not granular but vacuolar, and seems actually reduced in amount. In the perilobular tissue there is always infiltration to be observed and at times this is considerable. In rabbit livers there is just the beginning of steatosis but it is very limited in amount." In the livers of dogs he notes the following appearances: "The hepatic columns between the capillaries are reduced to small, narrow bands made up of cells that are completely altered in form and practically all reduced in size. They are cloudy in appearance, granular, and in some parts completely destroyed, converted into globular masses of material not to be recognized as cells." (*Annales de l'Institut Pasteur*, 1897. *Annals of the University of Montevideo*, vi year, vol. xi, pp. 76, 86-100.)

It is evident from these quotations that to speak of Sanarelli's ignorance of coagulation necrosis and its relations to steatosis is entirely uncalled for and gratuitous. It is no wonder that he read with surprise Drs. Reed and Carroll's declaration that he had not made any mention of these most striking lesions when they seemed to refer in their first article to spots of necrosis easily visible to the naked eye.

There are certain necrotic lesions of the liver that are very similar in a number of infectious diseases. Hanot noted in the livers of patients dead from practically all of the infectious fevers, whitish spots with identical histological characters.<sup>1</sup> He did not, however, because of this announce that there was reason to think of an identity of virus in the various infectious diseases, yet it would seem to be on some such insecure ground as this that Drs. Reed and Carroll would argue the identity of the bacillus icteroides and the bacillus cholerae suis, because forsooth both produce cellular necrosis of the liver.

There would seem to be a tendency here on the part of Drs. Reed and Carroll to confound necrosis in general with coagulation necrosis, two things that I need not say are utterly distinct. All the pathological anatomists are not agreed as to what coagulation necrosis is in essence or as to its cause, but all make it a thing apart from necrosis. It would seem that microbic toxins sometimes act upon the cell *d'emblée*, i.e., without producing gradual destructive effects. The cell is fixed rather than killed and presents a vitreous substance that often does not take the ordinary stain but requires the double stain, hematoxylin and eosin. A single lesion such as cellular necrosis ought certainly not be made the basis for declaring any two diseases identical, especially when they are differentiated by so many other points as are the affections produced by the hog-cholera bacillus and the bacillus icteroides. In their first article this production of liver necrosis was practically the only reason advanced by Reed and Carroll for thinking the two bacilli the same, though they now admit (*MEDICAL NEWS*, September 9, 1899) that a similar lesion occurs in many infections. What should be taken into consideration are the many points of distinction in the pathologic effects produced by the two forms of bacilli.

Welch and Clement even with attenuated cultures of the hog-cholera bacillus when injected intravenously always obtained the lesions produced by the virulent form, namely, hemorrhages, necrosis and diphtheritis. According to them similar observations were made by Theobald Smith.<sup>2</sup> Silberschmidt noted miliary abscesses four or five times in the livers and spleen of rabbits. At the point of inoculation abscesses occurred and sometimes they were large. After injection into the ear there was often edema of the auricle and swelling of the tissues over the jaws and at the back of the neck and this was often followed by deep and extensive abscesses in these regions. Often there occurred purulent pleurisy on the side on which the inoculation was

<sup>1</sup> *Comptes rendus de la Société de Biologie*, 1893.

<sup>2</sup> Welch and Clement, "Hog Cholera and Swine Plague," p. 13, 1894.

practised and more or less frequent abscesses at the base of the lungs with concurrent hepatization. The abscesses constantly gave pure cultures of the hog-cholera bacillus.<sup>1</sup>

In the hundreds of rabbits that have been sacrificed during the experimental observations on the bacillus icteroides neither Sanarelli himself nor any of the other observers, and their name is legion, has ever called attention to such hemorrhages, necrosis and diphtheritis of the intestine as occurs after inoculation with hog cholera. A subacute infection with the bacillus icteroides, though this form of infection is not infrequent in experiments with the hog cholera bacillus, was observed only by Foa and then only under the influence of anti-amaryllic serum.

Pulmonary and hepatic abscesses and purulent pleurisy are completely unknown in rabbits infected with the bacillus icteroides and I have yet to hear of a single case in which Sanarelli's bacillus was ever isolated from the purulent contents of a pericardial sac. These lesions that I have mentioned are surely at least as important as the simple foci of necrosis noted by Reed and Carroll. As to the diphtheritic lesions of the intestines, I think that my citation of a case in the MEDICAL NEWS for September 23, 1899, in which such lesions occurred in the intestines of hogs after the ingestion of the bacillus icteroides, will serve to show how dubiously significant they may be.

It must be borne in mind that the steatosis and cellular necrosis said to occur in the liver of dogs after inoculation with the bacillus icteroides develop very rapidly. An observation made on dogs inoculated four or five months before their death, such as is reported by Drs. Reed and Carroll, has no significance for the question of acute steatosis. In such a length of time the streptococcus of erysipelas may produce a steatosis as profound as that of the hog-cholera bacillus. It is the acuteness of the fatty degenerative process, it must be remembered, that distinguishes yellow fever and phosphorus poisoning from other agents that produce hepatic steatosis. Moreover, it must not be forgotten that when the animal survives for some time, the degenerated cell revives and with almost as much rapidity as the degeneration took place,<sup>2</sup> so that it is not impossible that in the course of the inoculations of a dog extending over four to five months in Drs. Reed and Carroll's observations, there was a series of degenerations and regenerations in the hepatic cells. Drs. Reed and Carroll do not say what method they employed to estimate the fat in the livers of the animals they had under observation. For comparative pur-

poses as to the effect of the bacillus icteroides and the bacillus of hog cholera, it certainly is not enough to make a microscopic examination only, and we are told nothing of the chemical analysis which should have been employed in order to make the estimation of the fatty material present exact.

The assumption that Sanarelli and his school know nothing of fatty degeneration and of cellular necrosis that marked the *tour de force* of Drs. Reed and Carroll's argument would really be amusing were the subject not so serious. Surely they will give us credit for a certain minimal knowledge of these subjects, in which case it would have been impossible for us to have fallen into the error they point out.

#### BETA-EUCAIN AS AN ANESTHETIC IN EYE, NOSE, AND THROAT WORK.<sup>1</sup>

BY WILLIAM H. POOLE, M.D.,  
OF DETROIT, MICH.

EVER since the anesthetic action of cocain was discovered and its use made practicable by Niemann and Koller there has been a hope in the hearts of many practitioners that some other equally efficient but less toxic drug would be evolved from the chemist's laboratory. As the dangerous condition frequently following the use of cocain, even in the hands of the most careful operators, gave birth to the unexpressed as well as oft-reiterated desire for some more safe anesthetic, so, too, it spurred on the chemist in his laboratory researches until success has seemingly crowned his latest efforts, and we have the product beta-eucain as the result. Exception may be taken to the foregoing on behalf of the ophthalmologist pure and simple, who has come to regard it as an axiom that cocain meets every requirement that could reasonably be expected of a local anesthetic; but we must not lose sight of the fact that the great majority of ophthalmologists include nose and throat diseases in their practice, and while they may have no fault to find with cocain as an anesthetic in the ophthalmological part of their operative work, yet this does not hold good in their rhinological and laryngological cases. I presume we each and all have had patients who, after a minimum dose of cocain was applied to the nose or throat, grew dizzy, faint, had a pallid countenance, with disturbed circulation, spasmodic action of the heart, great dyspnea, and final collapse into unconsciousness. I have at different times had such an experience following the local application of the drug, not only in the nose and throat, but in an eye case which will be referred to later on. Hence arises the interest I feel in this newer product which

<sup>1</sup> *Annales de l'Institut Pasteur*, p. 65, 1895.

<sup>2</sup> Jacoud, "Pathologie Interne."

<sup>1</sup> Read before the Surgical Section of the Mississippi Valley Medical Association at Chicago, Ill., October 6, 1899.

in my experience has proven equally efficacious as an anesthetic without producing the toxic effects above enumerated.

There are two entirely distinct products sold as eucain, the distinction being made by naming one alpha-eucain, the other beta-eucain. Beta-eucain is the one I am more particularly interested in at this time, though clinically there is no distinction necessary excepting that of irritation to the eye. It was on account of this irritation in the use of eucain A that eucain B was brought out and made available, as in the latter the irritant effects are minimal. Eucain B is a stable chemical compound which is not decomposed by heating even up to the boiling-point. This is a decided advantage over cocain solutions which do not keep well and are decomposed by heat, whereas the eucain solution can always be speedily made aseptic by boiling without in any way destroying the activity of the drug.

There are three conditions that must be fulfilled before a drug can lay claim to being an ideal anesthetic, *vis.*, the reduction of pain to a minimum, increasing the facilities of the operator to the maximum, and producing no unpleasant after-effects. As cotactors of these requirements I must consider the method of application, temperament of the patient, and skill of the operator. First, as to the reduction of pain or producing anesthesia, I have found from my experiments, both clinical and in private practice, that we possess in eucain an anesthetic by the aid of which we can render the mucous membrane so insensible that local operations may be performed without suffering on the part of the patient. The mode of applying the solution governs to a great extent the degree of anesthesia, and consequent comfort to both patient and operator. Instillation is the preferable method in eye and ear cases, while in those of nose and throat better results will be obtained from contact with a saturated pledget of absorbent cotton. Spraying the nasal cavity, be it ever so skilfully done, will not prove as satisfactory as a properly shaped and carefully applied cotton pledget. By properly shaped I mean spindle shaped, which is easily made by lightly twisting the cotton around the end of a probe, saturating it in beta-eucain solution, and placing it in position so that it lies parallel with the turbinate. The probe is then withdrawn, leaving the cotton *in situ*. In throat work swabbing with cotton, holding the cotton in contact with the part, and renewing the application produces satisfactory anesthesia.

The strength of the solution necessary to secure anesthesia depends largely upon what is to be done and the region affected. In ophthalmologic cases a two-per-cent. solution produces satisfactory anes-

thesia fully equal to that obtained by a four-per-cent. cocain solution. In addition to its use preparatory to operative procedure, it serves an excellent purpose in overcoming the irritability arising from applications of silver and copper to the conjunctivæ, the removal of foreign bodies, and many other conditions. This two-per-cent. solution is admirably serviceable also in all cases in which a thorough examination of the nares, pharynx, or larynx is necessary, where, through irritability or hypersensitiveness of the parts, such an examination would otherwise prove well-nigh impossible. In those patients who are intolerant of laryngoscopy as well as in some in whom irritating applications have to be made to the larynx, this solution is of great service. In operations in the nasal chambers the nasopharynx, the pharynx, and larynx a solution of from four to ten per cent. is required to secure satisfactory results.

The second condition necessary to an ideal anesthetic is that it shall aid the operator to the fullest possible extent. In discussing this point I shall necessarily have to consider (a) the temperament of the patient, (b) the rapidity, intensity, and extent of the anesthesia, and (c) the systemic as well as local action of the drug.

(a) Regarding the temperament of the patient, we have each of us undoubtedly met with patients of that peculiar mental and physical combination of make up that they involuntarily were a great help or a great hindrance to the operator.

(b) As to the rapidity, intensity, and duration of the anesthesia, I have found that there is a great difference in individuals as to the time required to secure satisfactory anesthesia; but in the majority of cases the effect of the drug has been noticeable in two or three minutes, anesthesia being obtained in from five to ten minutes after the application of the solution was begun and lasting from eighteen to twenty minutes.

(c) In regard to the systemic action of the drug, I have yet to see the first case in which it has produced any heart depression or other objectionable symptoms indicating systemic poisoning.

Locally the action of the drug differs essentially from that of cocain in nearly every respect, except that of producing anesthesia. In this it is fully as efficient and in some instances more so. While it is obvious that an exact comparison of the action of the two drugs is a matter of some difficulty, owing to the idiosyncrasy and varied sensitiveness to suffering on the part of different patients, yet there are certain local effects produced which are decidedly characteristic of each. In my experiments with eucain B. I made use of a two-per-cent. distilled water solution

in three different classes of eyes: those practically normal, those that were inflamed, and in operative cases. Instillation of an equal strength solution of the two drugs in each eye was made, with the result that some patients complained of more smarting from the cocain than from the eucain, while others claimed the reverse. Many of them experienced no discomfort at all.

As to how the ischemia of cocain, and the lack of it or possibly its opposite, the slight hyperemia of eucain is produced is not within our province at this time to determine, but it is certain that the instillation of eucain B. solution is not followed by that marked whiteness, as if frozen, and hypotonicity of the eye produced by cocain, neither is the eyeball projected forward with widely dilated pupil. In contrast with this the eucainized eye presents a normal appearance. In about half of my cases only was there a moderate degree of vascular dilatation without forward protrusion of the eyeball and without mydriasis, which renders it valuable in operations upon glaucomatous eyes in which the cocain mydriasis is inconvenient. One great advantage in favor of eucain is that the accommodation is not affected and the pupil remains unchanged, promptly reacting to light stimulus and convergence. Perfect insensibility of the cornea and conjunctiva is obtained in from two to three minutes, and no cloudiness of the cornea has been observed nor could I observe in the eucainized eye those wavy, broad lines in the cornea so frequently seen in the cocainized eye.

I have made use of beta-eucain in treating quite a few eyes that were in an inflamed condition, such as cases of foreign bodies in the cornea, keratitis, corneal ulcerations, episcleritis, and iritis. In these several conditions the anesthesia was fully as satisfactory as under cocain, except, possibly, in the case of iritis, in which there is more congestion of the anterior vessels. Here the patients experience greater relief from the cocain, owing to its vasoconstrictor action.

I have made use of the drug in the following instances in operating on the eye, ear, nose, and throat, obtaining fully as satisfactory obtunding of the sensibilities as could be desired, or as was obtained under cocain, and in two cases which I will specially mention the use of cocain was debarred on account of the alarming symptoms which set in under its use, the patient subsequently being operated on under eucain without the slightest untoward symptom arising. *Eye*.—Chalazion extirpation, 5 cases; entropion, 1; trachoma, 2; opening the lacrimal duct, 3; pterygium, 1. *Ear*.—Furuncle of the auditory canal, 2; paracentesis of drum membrane, 1. *Nose*.—Hypertrophied turbinates, galvanocautery operation, 7;

nasal polypi, 3; nasal spur, 2; foreign body, 1. *Throat*.—Abscission of uvula, 2; excision of tonsils, 3. In the eye cases a 2-per-cent. solution was made use of, while in the other cases a 4 or 8 per-cent. was deemed advisable.

The third condition or attribute that our ideal anesthetic should possess is that it should give rise to no unpleasant or untoward after effects. In my use of eucain this has been the case. Following the anesthesia I have found the disturbances of sensation much less lasting, less defined, and less unpleasant than when cocain was used. In fact, the greatest possible difference exists in regard to the toxic action of cocain and eucain, as was noted in the two following cases, the reports of which are taken from those above mentioned as illustrative of this point.

H. M., aged thirty-eight years, had been troubled with obstructive breathing in the nose for three or four years, which had been getting worse. He had used a spray of Dobell's solution for some time, but with only partial relief. Externally the contour of the nose was changed, being rounded out toward the cheeks on each side, altering the expression of the whole face. On rhinoscopic examination several polypi were discernible, hanging from the attic of the nares. After cleansing the field I applied a four-per-cent. solution of cocain to the right naris for the purpose of removing some of the growths with a snare. In two or three minutes the patient gave evidence that he was being affected by the drug by his rapid and loud talk and gesticulations. This was followed by great depression and dyspnea, the pulse becoming weak and slow. I placed him in a recumbent position and with the aid of amyl nitrite soon brought about his recovery. The next day, and several different times afterward, I used a four-per-cent. eucain solution, removing in all twenty-three polypi, and destroying their bases with the galvanocautery under eucain, without the slightest trouble manifesting itself and with perfect anesthesia.

W. K., aged thirty-two years. Multiple chalazion. Left eye, one on inner half of lower lid, one on outer half of upper lid. Instilled cocain solution in a few minutes caused such alarming syncope that I was obliged to place him in a horizontal position and use amyl nitrite and ammonia to bring about his recovery, and of course, suspended operations for that day. Three days following this, however, I extirpated the chalazions under eucain without any discomfort to the patient other than a slightly disagreeable hot taste caused by some of the eucain which had passed down the lacrimal duct. About a month later I removed another chalazion from his right upper eyelid under eucain without unpleasant effects.

I have cited these two cases simply to emphasize

the fact that there are cases, whether due to idiosyncrasy or not, in which cocaine is precluded, and if eucain were of use in none other than these it would still be of decided value.

*Conclusions.*—1. Eucain is decidedly less toxic than cocaine, therefore superior to it.

2. Its aqueous solutions keep well and can be sterilized by boiling without destroying the activity of the drug.

3. It produces anesthesia equally well and sometimes better than cocaine.

4. It is superior to cocaine in that it does not cause heart depression or other unpleasant effects.

5. It does not cause mydriasis or disturbances of accommodation, which is an advantage in some cases.

6. It is less dangerous to the cornea than cocaine inasmuch as it does not cause desquamation of the superficial epithelium.

## CLINICAL LECTURE.

### THREE INTERESTING HEART CASES.<sup>1</sup>

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**CASE I.**—The patient is a well-built man, about forty-four years of age, but pale and haggard in appearance. His history is one of articular rheumatism five or six years ago and sequential endocarditis. When he is stripped one can see the pulsation of the carotid and brachial arteries, the latter, when his hands are held up being visible at least across this room and even further, about forty feet. On closer inspection one can detect pulsations in the temporal and radial arteries; the capillary pulse is marked. A better exhibit of the water-hammer or Corrigan pulse is impossible. The apex beat is fairly strong and circumscribed in the seventh space one inch outside the nipple line. Beneath the end of the sternum a strong impulse is noticed, due to the action of the hypertrophied right ventricle. Both subclavian arteries are seen to heave and throb to an excessive degree during arterial systole. Palpation proves the strong action of the left and right ventricles but does not detect thrills over any part of the heart area. The systole is found to be 84 per minute. Over the carotids a marked thrill is detected, systolic in time. Over the subclavians noticeable heaving is felt, and a systolic thrill of truly immense amplitude. This thrill is most pronounced over the left subclavian but is detectable in the upper portion of each brachial artery. The pulse is collapsing at the radials, but of great volume at the height of the arterial wave.

The collapsing quality of the pulse gives rise to an interesting sensation at the brachial artery near the elbow which, so far as I am aware, has not yet been described. Personally, I have found it only in pulses with the water-

hammer quality in marked degree. Place the palmar surface of the left thumb vertically over the left brachial artery, the arm being extended. Make light pressure and notice the curious instantaneous tap with no precursory or succeeding sensations whatever. This tap is not detectable over the radials or the carotids. It is presumably due to the collapsing artery not being followed by the thumb in its inward movement. The vertical thumb is held outward by the surrounding tissue, and the artery collapses so suddenly that the thumb cannot follow it as can the fingers elsewhere. This tap or "hit and gone" sensation is interesting at least.

By the rate and strength of the cardiac systole it has been determined that hypertrophy predominates over dilatation. Percussion shows absolute dullness extending at least one inch to the right of the sternum and one inch beyond the left nipple line downward to the seventh space. Superiorly, it extends to the upper surface of the third rib. This is an extremely large area of dullness and denotes much enlargement of both left and right ventricles. Auscultation reveals a low, short, systolic murmur at the apex, heard best by means of a stethoscope with a rubber tubing. The heaving impulse if carried to the ear by a stiff instrument will overwhelm this murmur. It may be traced laterally and is audible in the posterior mitral area. In addition to this murmur of mitral regurgitation a low and indistinct diastolic murmur is detected over the second right interspace. It is transmitted down the sternum and is heard best at the left fifth intercostal space. A little to the left of this area is another murmur of slightly different pitch and quality and of decidedly different time, it being systolic. These two murmurs shade off into one another, and might be mistaken for a single murmur were it not that one is diastolic at its maximum point, the other systolic. The diastolic murmur conveyed downward to this area is aortic regurgitant in origin and follows the usual course of these murmurs when pronounced. The systolic murmur is due to insufficiency of the tricuspid valves.

Elsewhere over the heart proper there are no murmurs, but at the second right interspace near the sternum there is a harsh rasping murmur systolic in time. In conjunction with the thrill at the carotids and the murmur which is transmitted there we might presume this murmur at the second right space to be due to aortic stenosis were it not that this sphygmographic tracing which I have recently taken shows us besides the quick and long down stroke of aortic regurgitation an absolutely vertical up stroke of great height. This strictly vertical ascent and exactly pointed summit disprove the presence of any actual stenosis at the aortic orifice at this date. When stenosis exists there must be less rapid filling of the arteries than under other conditions. The ascending stroke of the tracing then occupies an appreciable fraction of a second and is registered as slightly inclining. While there may have been stenosis at some time the present condition is probably one of dilated aortic orifice following the wear and tear of the increasing insufficiency. In such a condition there is usually dilatation of the aorta also at the orifice. This murmur may be caused by vibrations, generated

<sup>1</sup> A clinical lecture delivered at the New York Polyclinic Medical School and Hospital.

primarily by extremely roughened or deformed valves, or by the exit of blood from the ostium into an artery of increased caliber. The murmur must be regarded then as generated at or about the aortic orifice without any actual stenosis.

Following along the course of the aorta one hears over the sternum a louder, rasping, extremely disagreeable murmur. This increases toward the left and is most audible over the left subclavian artery where the thrill is best located. This murmur is heard through the stethoscope in both radials to a pronounced degree. It is doubtless endo-aortic, and due to changes in caliber, or to extreme roughening of the artery, or both. No actual stenosis can exist here in the aorta either, as evidenced by the tracing. The changes are doubtless those of dilatation and roughening. The carotid thrill can be induced by the great vibrations generated by this aortic condition as well as by stenosis at the orifice. To my mind the murmur at the second right costal cartilage and this more exaggerated one over the course of the aorta and subclavian are related, and are due to the effects of aortitis, *i.e.*, dilatation, roughening, etc. The thrills are of the same primary origin as the murmurs but they depend upon vibrations of less speed and greater amplitude than those which produce murmurs.

The treatment in this case has been extraordinarily successful. The first year or so the patient took large doses of iodid of potash, as much as 50 grains, three times daily, with only slight relief. Then treatment with nitroglycerin was inaugurated and has since been carried out. The arterioles are kept completely unlocked almost constantly. When the tension is allowed to become high through carelessness or from other causes he becomes uncomfortable and is subject to attacks of extreme dyspnea and pain with distressing headache. His constant use of the nitroglycerin has injured him to its action and very large doses are required. He averages about 2 grains of the drug a day. I have given  $\frac{1}{4}$  of a grain in two hours during an anginal seizure with greatly increased arterial tension. In these large doses lie his salvation. There doubtless is marked degeneration of the aortic walls and probably of the coronary arteries. The nearly constant dilatation of the arterial system is of course participated in by the cardiac blood-vessels, and permits of excellent myocardial nutrition. The heart muscle being still so well nourished no cardiac tonics are called for. His condition is better than formerly but the prognosis is of the gravest. His liability to sudden death is very great.

CASE II.—The second patient, a man forty years old, was before you two weeks ago. At that time he gave the history of a slight rheumatic attack some years previously. He had been perfectly well since then, until three days before coming here, at which time he was overcome by sudden dyspnea, great weakness, vertigo, and edema of the legs. An examination showed that his lungs were normal with the exception that there were some signs of edema posteriorly and below. His heart was much enlarged, the dulness extending one inch to the right of the sternum and  $1\frac{1}{2}$  inches to the left of the mammary line in the sixth space, where the apex was located by auscultation.

You remember that the impulse was then neither visible nor palpable, and that no murmurs were present owing to the extreme weakness of the heart action. The pulse rate was 140 and difficult to count; the first and second sounds were indistinguishable from one another; in other words, the cardiac cycle resembled that of the fetal heart. The urine was scant and slightly albuminous.

Having excluded the possibility of pericarditis with effusion the diagnosis of great acute cardiac dilatation was made. I said that although no murmurs were present the lesion was probably an aortic stenosis or mitral regurgitation. The possibility of an uncomplicated mitral obstruction was excluded owing to the enlargement of the left ventricle. An aortic regurgitation might have been present, but this was hardly likely as the pulse in the carotids, where it was visible, was not collapsing as one would expect in aortic insufficiency. Then again, aortic insufficiency with a pulse of 140 would not permit the patient to rise from his bed without the probable occurrence of syncope.

The treatment was vigorous, consisting of the administration of half an ounce of the infusion of digitalis reinforced by one twenty-fourth of a grain of strychnin four times daily. The infusion was chosen for its double action on the kidneys and heart. Three days later his urine was not so scanty, and his pulse was somewhat stronger. The treatment was continued until his next visit, just a week from his first appearance. The urine was then abundant, about two quarts in the twenty-four hours. His pulse was 100 and much stronger. Strychnin was discontinued, and the infusion of digitalis continued with the addition of five grains of iodid of potash three times a day. The potassium iodid was given solely as a means of unlocking the arterioles and overcoming the tension in the arteries which was excessive. I have already explained the action of the iodids, as brought to notice by Balfour, in my previous talks on the employment of the vasodilators in heart disease.

To-day we find the area of dulness somewhat less, the apex beat visible and palpable about three-quarters of an inch outside the nipple line in the sixth space. By auscultation one can detect the great improvement in the heart sounds, the systolic sound being easily identified and of fair tone. A feeble systolic murmur is heard at the apex area and posteriorly, evidence of mitral insufficiency. Over the right second space is a very low-pitched systolic murmur probably due to aortic stenosis, but one must be cautious in so pronouncing it as these murmurs are sometimes produced in the anemic heart, as I have already demonstrated. The fact that this murmur is not accompanied by a thrill and is not conducted to the carotids does not by any means exclude stenosis, but means that it is too feeble to have the usual concomitant vibrations and areas of transmission. The sphygmogram shows a pulse of high tension but fair quality. The ascending stroke shows an angle of about  $30^\circ$  from the vertical, is distinctly slow in its ascent and rounded at the top. This, with the basic systolic murmur and the great enlargement of the left ventricle (greater than is usually seen in uncomplicated mitral insufficiency) makes the

diagnosis of some stenosis at the aorta probably correct. The pulse is now 80. Over the tricuspid area there is a systolic murmur of a rasping character, due to regurgitation at the right auriculoventricular orifice. This regurgitation is easily proved by allowing the patient to assume the semirecumbent position when an impulse is detected in the right jugular vein synchronous with ventricular systole. A slight diastolic pulsation can also be detected. This is not due to regurgitation at the orifice but to partial emptying of the right auricle upward into the veins on auricular systole, during cardiac diastole. This jugular movement, diastolic in time, is frequently seen in persons with hard working hearts when in the reclining position; the systolic pulsation never, unless the tricuspid leaks, and it is even then not always demonstrable.

The patient's condition is now fair, the edema is nearly gone, the urine is large in quantity. Not wishing to force the heart and kidneys so excessively now, instead of the infusion we will give him 10 drops of tincture of digitalis three times daily, which is a proportionately smaller dose than half an ounce of the infusion. The potassium iodid being well tolerated and the tension still too high we may slightly increase the dose to 8 grains three times a day. The patient must be carefully watched now; the temporary discontinuance of digitalis may be indicated at the next visit. With such dilatation and a pulse only as low as 80, with the passage of large amounts of urine there need be no fear from the use of the drug as yet.

These cases of acute failure of the cardiac muscle, the acute, severe breaking of a previously good compensation are always grave. One never knows how the myocardium may react to stimulation. What may appear to be a recoverable attack may be the onset of a slowly in-gravescent terminal asystole. Treatment must be vigorous.

Now that the patient has left the room I will state that the prognosis is good for this attack, but bad for future ones. Sudden development of such cardiac symptoms without previous suspicion of heart disease points to a very sudden exhaustion of the muscle, and particularly when following the lesions which he has, is of poor prognosis. The complete giving way of the right auriculoventricular orifice is already assured and general venous stasis will at times supervene. However, the patient may continue for a long time under treatment without another collapse. To fix the date of final invalidism is naturally difficult in heart cases, but in this instance it is not far away.

CASE III.—The third patient, a man forty-seven years of age, gives the history of having had attacks of pain in his chest and left arm for about ten years. During the periods of pain he also suffers from dyspnea. Five years ago he lost his voice rather suddenly and his condition was such that it necessitated his stopping work. At present he is about as he was then, according to his statement. He gives a specific history dating back twenty years and states that the diagnosis of aneurism was made a decade ago. He has been under observation at this clinic for about one year. His weak, cracked voice makes us suspicious of tubercular or specific laryngitis, or of paralysis of a cord. Examination of the larynx shows

the left cord fixed in adduction, the cadaveric position. This is due to paralysis of an abductor by pressure on the recurrent laryngeal nerve, frequently by aneurism. It will also be noticed that the left pupil is fixed in contraction, responding neither to light nor accommodation, a myosis due to pressure on the sympathetic nerve, also pointing to aneurism. His metallic, paroxysmal cough is another pressure symptom. Inspection of the chest reveals nothing except the apex beat within the nipple line at the fifth space. There are no other pulsations of the chest visible. Palpation shows that the left pulse is slightly retarded; the rate is 70, the tension normal. There is a systolic thrill in the right carotid. Percussion reveals an abnormal area of dullness extending from the right margin of the sternum at the second cartilage upward to the first rib and across the sternum for about one inch and a half to the left. On this side it extends downward to the third rib forming a somewhat pear-shaped area. There is a dull area posteriorly between the second and fifth ribs near the left side of the column. The heart is quite normal in its sounds, with the exception of an accentuation of the aortic second sound which, if no evidence of general high tension be present, is a very valuable guide in aneurismal cases. In this instance the accentuation is not at all marked, implying but little dilatation of the aorta in its first division. At the second right space a low-pitched systolic murmur is detected which extends across the sternum and is lost to the left. There is also a transmission of this murmur up the right carotid. Now with a low-pitched murmur at the second right space, and a thrill and murmur systolic in time in the carotid one might be led to make a diagnosis of aortic stenosis, as these are classical symptoms of stenosis according to some observers. But as this thrill and murmur have to my certain knowledge been present a long time and the left ventricle is *not* enlarged one can positively exclude stenosis. It is an intra-aortic murmur, pure and simple, and denotes change of caliber or roughening or both.

The diagnosis of dilatation of the aorta (aneurism) can safely be made. The lesion is in the transverse and the commencement of the descending portion of the aorta, as is evidenced by the area of anterior and posterior dullness and the pressure symptoms in the larynx and eye. The presence of dysphagia and tracheal tugging with not much accentuation of the second sound aid in locating the aneurism. The present good condition of the patient and the stationary character of the symptoms, with the absence of detectable impulse lead to the opinion that there has been pretty firm fibrinous consolidation of the sac. The treatment for years has been with iodid of potash in large doses for long intervals. When the pain becomes severe he seeks treatment and is quickly relieved by this remedy. Besides its supposed action on the arterial walls the drug affords him relief, probably by dilating the arterioles and thus diminishing pressure within the aneurismal area. He has had no other treatment not even rest.

The points of particular interest in this case are the pressure symptoms in the larynx and eye, the undoubted intra-aortic murmur and its area of transmission with thrill,

the long duration of the disease, and the absence of other usual symptoms such as hemoptysis. These cases of deep-seated aneurism are extremely difficult to consider from a prognostic standpoint. Rupture of the sac may occur at any moment but the stationary character of the symptoms is at least hopeful. This man has lived an extraordinarily long time already, very much longer than the average one suffering from an aneurism.

## MEDICAL PROGRESS.

**So-called Typhoid-Pneumonia.**—SMITH (*Mary. Med. Jour.*, September 2, 1899) draws the following practical conclusions in regard to the use of the term "typhoid-pneumonia": In view of the fact (1) that the majority of pneumonias occurring in the course of typhoid fever are not caused by Eberth's bacillus, but by the pneumococcus, and (2) that asthenic pneumonias with so-called typhoid symptoms have nothing in common, so far as etiology is concerned, with typhoid fever, it would seem advisable to discard the term typhoid-pneumonia as savoring too much of inaccuracy. For those rare cases in which it can be proved beyond doubt that the pneumonic processes as well as the general typhoid infection are both due to the bacillus of Eberth we still have the term pneumo-typhoid, the use of which, however, should be subject to these strict limitations. Accuracy in terminology is the first step toward a reasonable therapy, and calling conditions by their wrong names must inevitably lead to a less clear-sighted management of them.

**Excision and Suture as a Cure for Impermeable Stricture of the Urethra.**—DEANESLY (*Brit. Med. Jour.*, July 29, 1899) reports a case in which he cured an impermeable stricture of the urethra about half an inch long and situated at the anterior part of the bulbous urethra by resection and suture. He made an incision from the anus to the scrotum and easily exposed the constricting portion. But although the urethra was opened in front of and behind it, it was impossible to pass even the finest probe through the stricture. The strictured portion was therefore resected and the healthy portions of the urethra sutured with six silkworm-gut sutures which were passed through all the coats of the urethra. Other sutures were passed through the outer coats. The catheter was left in position and the urine was exhausted by Cathcart's apparatus. By this means the wound was kept perfectly dry for ten days. The catheter was then removed but was used to draw off the urine several times daily. The operation was very successful and a year later there was no sign of contraction, though a sinus still persisted, due apparently to a silkworm-gut stitch. There was no leakage of urine, however, either during or after micturition.

**The Nature of Black-water Fever.**—DOWLER (*Brit. Med. Jour.*, July 15, 1899), who has practised in Bengal for some years, states that black-water fever is rare among the natives although they make the misleading assertion that they have passed bloody urine, when it is merely of a high color due to malaria. The disease differs from malaria in the hemorrhagic character of the urine, in the

fact that it runs at a lower temperature, seldom above 101° F., in the muscular weakness and prostration, and in the tendency to syncope. In spite of these differences, Dowler questions whether malaria and black-water fever may not both be due to similar if not the same causes.

**Management of Pregnancy Complicated by Abdominal Tumors.**—HALL (*Jour. Amer. Med. Assoc.*, September 2, 1899) says that the ease with which some patients recover after the removal of abdominal tumors during pregnancy, should not mislead one into the belief that there is no danger of abortion under such circumstances. If it does occur, its risk is greater than at other times, yet this fact should not deter one from an operation which is clearly indicated. Operation is advisable in all cases in which the tumor is small and fixed in the pelvis below the uterus, so that it cannot be lifted out of that cavity. Operation should also be performed if the tumor itself presents complications such as a twisted pedicle or a ruptured cyst. Operation is not to be advised during pregnancy if an ovarian tumor is above the uterus and is too large to occupy the pelvic cavity and does not give rise to important symptoms. The writer advises operation in all cases in which a fibroid tumor occupies the lower segment of the uterus in such a position as to interfere with delivery at full term. The time selected for operation must depend upon the individual case. If the woman has passed the fourth or fifth month of gestation and it is possible to carry her nearly to full term, the question of saving the child must be discussed. If her surroundings are favorable this may be attempted. In many cases the long-continued pressure upon the ureters interferes with the action of the kidneys to such an extent that immediate operation should be performed, else the mother if allowed to go on to full term will be likely to die after the operation from urinary complications. This is even more likely to be the case if the tumor develops in the broad ligament.

**Differential Diagnosis of Smallpox.**—CORLETT (*Vir. Med. Semi-Monthly*, August 11, 1899) insists upon the importance of the recognition of smallpox on account of the harmless appearance of mild cases and on account of the difficulty of maintaining strict quarantine regulations, unless a positive diagnosis is made. All forms of smallpox are essentially the same and the source of contagion no matter how bland is no criterion as to what form the disease will assume in those exposed to it. The typical smallpox lesion is indurated. In typical smallpox or varioloid the most prominent lesions may be composed of small blisters which when punctured absolutely collapse, but in all cases there will be some indurated lesions. In the initial stage smallpox often simulates cerebral meningitis more closely than any other disease. Again, the severe epigastric pains and vomiting have led the physician into thinking that intussusception or appendicitis is present or that the patient had swallowed some poisonous material. In the initial stage smallpox may be mistaken for measles on account of the erythematous eruption which is not infrequently present during the initial fever. In measles the rash appears later, on the third or fourth day of the disease, while the mucous symptoms which are so promi-

nent in measles are nearly or quite absent in smallpox. There is never any induration in the lesions of measles. With the appearance of the eruptive stage the temperature rapidly falls in variola but not in measles. Scarlet fever may be confounded with varioloid but the premonitory symptoms of the former are by no means so severe as are those of the latter. The pulse in scarlet fever is rapid out of proportion to the mild fever. In variola the two agree. The rash of scarlet fever is brighter than that of variola and occurs first on the chest, cheeks, and neck instead of on the lower portion of the abdomen and thighs. The cervical lymphatic glands often swell in scarlet fever, rarely in the early stage of variola. The scarlet tongue so characteristic of the former is absent in the latter. The prodromal rash of variola seldom occurs in young children. Smallpox has been mistaken for impetigo. The lesions of the latter disease which led to this mistake were due to secondary infection of the smallpox lesions by ordinary pus cocci, giving rise to a collection of serum under the epidermis surrounding the encrusted smallpox lesion. Such an error in diagnosis will hardly be made by any one familiar with the two diseases. Chicken-pox and smallpox have often been confounded and in Germany it is still taught that the two diseases are identical. Histologically, however, the lesions have been shown to differ in location, as well as in the manner of their formation. In varicella the superficial strata of the epidermis are principally involved while in variola the first changes take place between the epidermis and the capillary layer of the derma; consequently the lesions in varicella are easily destroyed, whereas in variola it is impossible to rupture the lesions so as to evacuate the entire contents without numerous punctures. In varicella multiple lesions are the rule. In variola the lesions present a uniformity of development. In varicella the lesions are short-lived, lasting but a day or two. In variola a fortnight or three weeks completes the life-history of the lesion. Even in mild cases of variola in which the lesions have a shorter life-history the multiple form character is less conspicuous than in varicella. Varicella is essentially a disease of childhood. It is seldom if ever seen after puberty. Premonitory symptoms of smallpox have more than once been mistaken for those of grip. This illustrates the necessity of daily visits in doubtful cases, especially if there are smallpox patients in the neighborhood. The appearance of the eruption ought to correct the error. Syphilis has been mistaken for smallpox and the eruptions caused by the ingestion of certain drugs, such as cubebs, copaiba, and iodid of potash, may lead to a similar mistake. The absence of all febrile symptoms, the history of the patient, and the odor of the drug, will usually serve to correct the diagnosis.

**Thrush in Nursing Infants.**—HUTINEL (*Wien. Med. Blat.*, August 17, 1899) says that an exclusive local treatment has only a palliative effect in cases of infantile thrush because the source of trouble is not local but is in the sour secretion of the mouth which is the result of an acid dyspepsia. His practice, therefore, is to wash out the stomach with an alkaline water, Vichy preferably, repeating the process twice daily. About six ounces of

water are allowed to flow into the stomach and siphoned out again. In simple cases a cure is usually effected in three days. Even in severe cases it is rarely necessary to extend the treatment beyond six days. Local treatment of the mouth was altogether given up by Hutinel.

**Calentura Compared with Yellow Fever.**—TEBAULT (*New Orleans Med. & Surg. Jour.*, September, 1899) says that the specific fever existing in the tropics, to which the Spaniards have given the name of calentura, and which caused such a scare among the American troops after the surrender of Santiago, presents so many symptoms in common with yellow fever that a severe case of it may easily be confounded with yellow fever, especially if jaundice is present. In the majority of instances the fever is of two-and-a-half-days' duration and is preceded by a morning chill. The initial temperature (103° F. to 105° F.) is higher than that of yellow fever. The pulse becomes slow much sooner than in yellow fever and remains slow for a longer period. There is prolonged debility rather than "calm" or collapse. Gastric irritability is slight, jaundice less common, albumin absent or, if present only in small quantities. The liver is increased in size. There are no secondary infections. There is often bleeding at the nose but rarely hemorrhage elsewhere. Attacks are prone to recur every two or three months among foreigners and once or twice a year among natives. The fatality is practically nothing. The disease spreads more rapidly than yellow fever. Yellow fever often travels in the wake of the more active calentura or the two diseases may occur side by side; but yellow fever is so rare as compared with calentura that the writer speaks of it as a "four-leaf in a patch of clover."

## THERAPEUTIC NOTES.

**Calomel as a Diuretic in Cardiac Affections.**—BOURGEON (*Rev. de Therapeut.*, August 15, 1899) says that diuresis produced by calomel in valvular affections of the heart increases as the drug is continued, but is essentially temporary in that its action ceases with the suppression of the remedy. The quantity of urine excreted is variable, and seems to depend upon several factors, such as the constitution of the patient, the nature of the trouble, and the degree of edema; but it is remarkable that polyuria is more accentuated when the dropsy is of cardiac origin. The daily quantity of urine voided ranges from a pint to three quarts, and the dose of calomel necessary to obtain diuretic effects varies from 3 to 6 grains per day. This amount should be given in one or two doses in a little milk every two, three, or five days according to circumstances. If albumin appears in the urine the calomel should be stopped. This powerful remedy should be reserved as a last measure. If digitalis, squill, milk-diet, and cooling drinks in large quantities do not produce diuresis, one may resort to calomel. As it is absolutely impossible to foresee its exact results it should be used with great caution.

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SATURDAY, OCTOBER 21, 1899.

#### PHOTOTHERAPY AND ITS POSSIBILITIES.

DURING the past few years there have been occasional rumors of the possibility of the light-rays being used as a therapeutic agent, especially in skin diseases. It is well known that the violet rays of the spectrum affect bacterial growth unfavorably. Some years ago, Finsen of Copenhagen pointed out that the scars left after an eruption of smallpox, were much less serious if the patient were protected from the action of the rays of light belonging to the violet end of the spectrum, as these produce irritation of the skin when concentrated, and in inflammatory conditions such as smallpox naturally aid in the destruction of tissue and consequently intensify the subsequent pitting.

After demonstrating that his theory was correct and that the bad effect of these rays could be eliminated Professor Finsen experimented further with the idea of making use of the violet and related rays for therapeutic purposes. The results of his experiments were followed with great interest. Nearly two years ago Lesser, professor of venereal diseases and dermatology at the University of Berlin, in a lecture which

appeared subsequently in the *International Clinics* said that the most promising therapeutic agent against lupus vulgaris, providing it proved as successful in other hands as in those of the discoverer, was Finsen's phototherapy. Finsen's demonstrations at the congress for tuberculosis in Paris last year did not come as a surprise but they did succeed in convincing the most skeptical of the important therapeutic power residing in rays of light.

Finsen's assistant, Dr. Valdemar Bie of Copenhagen describes in the *British Medical Journal* for September 30, 1899, the methods and results of Finsen's treatment. The only indications for treatment are that the disease be superficial, local, and of bacterial origin. So far the light treatment has been applied to lupus vulgaris, to lupus erythematosus, and to alopecia areata. In lupus vulgaris, as the pictures of patients before and after treatment attest, the result is probably better than that secured by any other method of treatment. The application is painless and the liability to relapse is slight. In lupus erythematosus the effect is not so satisfactory and relapses are rather frequent. In alopecia areata the results have been most encouraging and seem to demonstrate, beyond all doubt, that that affection is of bacterial origin.

The method of treatment consists in concentrating on the affected parts the violet and ultra violet rays of light. The sunlight of a bright day or the light of a strong electric-arc light of 50 to 80 amperes, is employed to furnish the white light. From this all rays except those chemically most active are filtered out by means of a blue lens. A hollow glass lens filled with a proper colored blue solution, as a dilute solution of ammoniated copper sulphate, helps to cool the rays as they pass through to the skin. For the electric arc, lenses of quartz are used because they allow the violet rays to pass more readily than do those of glass. The patients are protected from the heating effect of the concentrated light by a small hollow glass disk, pressed close against the skin, through which cool water is allowed to circulate constantly. A little experience soon gives facility in managing the apparatus and the danger of accident from the concentrated rays is very slight.

Professor Finsen's work deserves to be known and his suggestions to be put in practice on a much wider scale than has yet been attempted.

**THE INCREASE OF CANCER REAL NOT APPARENT.**

DIRECTLY after the publication of Dr. Roswell Park's striking article on the increase of cancer [MEDICAL NEWS, April 1, 1899], there followed quite a discussion in the medical journals of this country and of England as to whether the increase of cancer, according to the mortality statistics, was apparent or real. A number of letters were written by those who could not bring themselves to believe that cancer is really on the increase, in which they endeavored to show that the apparent increase is really due to better methods of diagnosis. A number of obscure internal conditions that were formerly set down in the mortality statistics under various names according to the special symptomatic condition that was most prominent in them are now correctly diagnosed and reported as cancer.

So great is the tendency to refuse to accept what is new, when it is a surprise or has been entirely unexpected, that the majority of the profession have been rather inclined to revert to this explanation of the statistical increase of cancer. It is undoubtedly true that the gradual evolution throughout the profession of better diagnostic methods as to internal cancer has led to the addition to the cancer mortality statistics of a certain number of deaths that were formerly set down as due to other causes, but this factor by no means is sufficient to account for the greatly increased prevalence of the affection that is reported from year to year.

The statistics of the Registrar-General of England for the year 1897 have become available since the discussion in the spring. Dr. Tatham in the introduction to the Registrar's report does not accept the view that the increase of cancer in recent years is only apparent, though he admits that during the decade from 1870 to 1880 this factor probably played an important rôle in the increased number of cancer cases reported. Since then the apparent increase for this reason has been growing steadily less and less, and at the present day we surely cannot say that from year to year there is such a progressive betterment of methods of diagnosis as would add markedly to the number of cancer cases reported.

In the London *Lancet* for September 16, 1899, Dr. Payne makes an interesting comparison between the death-rate from cancer and from tuberculosis in the

female sex during the two years at the beginning and end of the last score of years for which we have reports. In 1877 the death-rate for females from cancer was 636 per 100,000, that from phthisis was 1967 per 100,000; *i.e.*, the cancer death-rate was less than one-third that of tuberculosis. In 1897 the death-rate from cancer was 929, that from phthisis 1162, per 100,000, a ratio of 4 to 5; that is, cancer now causes in English women four-fifths as many deaths as are caused by phthisis, a condition of affairs that is certainly very surprising especially to those who are prone to think of cancer as a comparatively rare disease.

Some of this approach of the death-rates from the two diseases is due to the improved methods of dealing with consumption which has made it much less fatal. The increment of nearly fifty per cent. in the death-rate per 100,000 from cancer is, however, sufficiently startling to make us realize the importance of the present comparison. This death-rate, it is to be remembered, is among women, while it has been argued that it was especially the statistics of cancer among men that showed that the increase was apparent not real. We are, then, surely in the presence of a highly increased mortality from cancer, and this is not due to the lessened number of deaths from infectious diseases, nor to longer average life, but to actual heightened incidence of the malignant affection.

**MICROBES IN THE ARCTIC REGIONS.**

RECENT explorers in both the Arctic and Antarctic regions have brought back interesting information concerning bacterial life in the frigid zones. It has long been known that travelers in the Arctic territory suffer very little from excessive changes of temperature, and are entirely free from colds and coughs which are so frequently observed in the winter in our own latitude. Nordenskiöld is authority for the statement that Spitzbergen in the summer time is the healthiest portion of the earth. Levin made a number of cultures of the air in Spitzbergen and in King Charlesland. Samples of air were taken on the surface of the glacier, on the coast, on the top of a cliff, as well as on board ship. In each instance at least 1800 liters (nearly 50 gallons) of air was filtered, indicating an elapsed time during the experiment of four or five hours. In only one in-

stance were bacilli found. In that case the air was taken from the deck of the vessel while it was in harbor, and as only three colonies of bacteria developed, it is at least a question whether a grain of dust from the ship did not get into the gelatin. On the other hand, all samples of water, whether taken from the surface of the sea or at a great depth, or from a glacier or obtained by melting snow or ice, were found to contain bacteria, although in very small numbers. At the surface of the sea Levin found one germ for each 11 c.c. (3 drams) of water—a quantity of germ-life which is absolutely insignificant. The same amount of water taken from the River Seine has been found to contain more than two million bacteria. A curious fact was noticed in that the water taken from the ocean at great depth invariably contained more bacteria than water from the surface, and this in spite of the fact that deep water in the Arctic Ocean is usually below the freezing-point. Levin made another series of experiments in order to determine the bacterial condition of the intestinal contents of various animals, white bears, seals, reindeer, eider ducks, penguins, gulls, frigate birds, sea-urchins, sea-anemones, shrimps, etc. These experiments showed him that in most of these animals the contents of the intestine are almost entirely sterile. In one white bear and in two seals was found a species of bacteria which resembled the bacillus coli commune. The inferior animals, sea-urchins, sea-anemones, etc., usually contained bacteria.

While scientists have long held that bacteria are not indispensable to digestion, it is extremely interesting to receive this proof of their statement direct from the natural world. This fact and the fact of the existence of a whole world of bacterial life at a temperature sometimes  $3\frac{1}{2}^{\circ}$  F. below the freezing-point are the most valuable results of Levin's researches, a full report of which will be found in the July number of the *Annales de l'Institut Pasteur*.

#### THE PLAGUE ONCE MORE.

We stated recently that just when the sanitary authorities at Alexandria were sure that they had seen the last of the plague, and just after the editor of the *British Medical Journal* had thought it opportune to compliment them on their happy deliver-

ance from the dread disease on such comparatively easy terms, came the announcement of the discovery of new cases of bubonic plague in the city, some of which proved fatal. Almost the same thing has happened at Oporto in Portugal. At first every assurance was given that the disease would be kept well under control. Successive official reports were more and more encouraging until it looked as if all danger from this quarter could be considered as past. Then came disquieting reports as to the doubtful efficiency of the sanitary cordon that had been established. Finally, there are definite accounts of a recrudescence of the disease in Oporto and its occurrence among the soldiers who form the military cordon of sanitation.

We have pointed out before that this intermittent method so well calculated to disarm suspicion is not new to the plague, that it has been in fact characteristic of its invasion in all the great epidemics of history. By the people in Portugal the danger from the plague has never been taken seriously. On the contrary, they oppose in every way the enforcement of the sanitary regulations necessary to prevent its spread. Only last week there was the report of plague quarantine officers while on duty having been stoned by the people and compelled to call upon the military for protection. Even intelligent people insist that though the disease is present it will not spread in epidemic form in the present condition of civilized life.

This attitude of overconfidence in the safeguards of modern life was what gave plague its hold in India during the present epidemic, and it is constantly spreading there now despite all that is being done. These recent failures to stamp out the disease at Alexandria and Oporto show that it is not so easy to deal with as was thought. They emphasize the necessity for the strictest quarantine regulations to prevent its entrance. We have previously pointed out our danger on the Western coast and the necessity for constant watchfulness. In the light of recent events especially the occurrence of chronic ambulant cases of plague, another source of danger becomes manifest. There is the possibility of plague gaining an entrance at some of our lesser ports where only sailing vessels touch. At these points medical officers are apt to be unfamiliar with plague and vessels may more readily escape rigid in-

spection. The present prosperous trade conditions have made the possibilities for plague invasion by this way even greater than before. No precaution should be spared to make these lesser ports as secure as those of the large cities, for a Nation's quarantine is only as effective as its weakest point.

## ECHOES AND NEWS.

**The Tri-State Medical Society.**—This society, which covers in its scope the States of Alabama, Georgia, and Tennessee, will hold its eleventh annual meeting at Chattanooga, October 23, 25, and 26, 1899. The preliminary program has already been published.

**A Paris Doctor of Pharmacy.**—The degree of Doctor of Pharmacy has just been conferred by the University of Paris for the first time. The recipient is M. Lacourt, who presented a graduation thesis, entitled "Historical, Chemical, and Bacteriological Study of the Versailles Water."

**Obituary.**—Dr. J. N. Brownlow of Ogdensburg, New York, died suddenly of angina pectoris on October 10th, just after he had delivered an address before the Northern New York Medical Association. The doctor was sixty-five years old.—Assistant-Surgeon W. R. McAdam, who was in charge of the Marine Hospital at Key West, died of yellow fever on October 12th.

**Physician Robbed in Chicago.**—Dr. Oscar W. Hubbard, a Chicago physician, was waylaid by two highwaymen on the morning of October 14th, just after he had visited a patient. Revolvers were pressed to his head, he was dragged into an alley, thrown to the ground, and robbed of a gold watch and diamond pin. One of the robbers was caught and identified by Dr. Hubbard.

**The American Public Health Association.**—The twenty-seventh annual meeting of this organization will be held at Minneapolis, Minn., October 31 and November 1, 2, and 3, 1899. The topics for discussion, as announced in the program, quite completely cover the entire field of hygiene and sanitation. Railroad and hotel accommodations have been arranged for and a large and interesting meeting is expected.

**Death from Hydrophobia.**—Charles O. Young, a boy seven years old, living in Jersey City, New Jersey, was bitten on the hand by a vagrant dog about six weeks ago. Two physicians made a diagnosis of acute hydrophobia. Dr. Gibier was consulted on October 11th. He advised that the time had passed for the possibility of effective treatment by the Pasteur method and that the Bouisson hot-vapor treatment be tried. This was ineffectual and the boy died in great agony on October 13th.

**California Not to Bar Consumptives.**—The State Board of Health has decided not to quarantine California against the consumptives of other States. It has adopted a reso-

lution, however, recommending that in all State institutions those afflicted with tuberculosis be separated from the other inmates. This is a very sensible modification of the radical measures of absolute exclusion of all consumptives at first proposed. While tuberculosis is undoubtedly contagious it is not so to such a degree as to make quarantine regulations advisable.

**The Influence of Americans in Cuba.**—*El Epoca* of Havana says: "Contact with a race which does not tolerate the shirking of daily labor, and among which, before everything, a man is the legitimate child of his own merits and his own deeds must be to us a powerful stimulant for discarding once and forever the accumulation of habits which constitute the unfortunate inheritance of a régime based upon the exploitation of the negro by the white, and the native born white by the peninsular white, and all by the government."

**The Loomis Sanitarium Burned.**—The Loomis Memorial, or Administration Building, a gift of Mr. J. Pierpont Morgan to the Loomis Sanitarium at Liberty, Sullivan County, New York, was entirely destroyed by fire on October 14th. The loss is from \$75,000 to \$100,000; the insurance is \$50,000. There were one hundred inmates, all of whom were removed safely. The nine surrounding cottages and the other buildings remain intact. The fire is supposed to have originated from the explosion of an alcohol lamp.

**Some Enormous Tumors.**—The *Lancet* has lately presented some remarkable records of tumors. The largest known uterine tumor weighed 195 pounds, described by a Bucharest physician. Hunter of New York removed one weighing 140 pounds from a woman whose weight without the tumor was 95 pounds. The largest fibroid is said to have weighed 106 pounds. The record for ovarian tumors is held by a Chinese patient, who had one weighing 169 pounds; without it she weighed 77 pounds. For mammary tumors a case is recorded in which the growth in one breast weighed 46 pounds and in the other 40 pounds.

**The Yellow-Fever Situation** does not show much change from last week. There was one death from the disease at New Orleans on Friday of last week, but recently no new cases have been reported. It is announced that Spain has quarantined against New Orleans because of the presence of yellow fever, and it is thought that other Mediterranean ports will do likewise. This seems an unfortunate and needless precaution, now that the epidemic is practically over. New cases of yellow fever to the number of about 15 or more are being reported every 24 hours at Key West. Santiago de Cuba had been remarkably free from yellow fever for some time until the disease was imported from Havana.

**Our Troops in Cuba Healthy.**—In a letter which Surgeon-General Sternberg received on October 9th from Major Vallery Harvard, Chief Surgeon of the Department of Santiago and Puerto Principe, it is stated that the percentage of sick men in the commands with which he is

connected seldom exceeds five per cent., practically all the sickness being malarial fever of a mild type. At Puerto Principe nearly two regiments are in camps, having been driven from their barracks in the city by yellow fever. These are model camps as regards hygiene and comfort, and the sickness in them is only four per cent., just about the same as in the United States. Our troops cannot safely live in the Cuban towns. With the exception of those at Baracoa, Gibara, and Holquin, which have not yet given any sign of infection, all the old Spanish barracks in the towns have been abandoned.

**Indian-Plague Horrors.**—A correspondent of the *Scotsman* writes concerning the plague in the city and cantonments of Poona, that to Defoe's most realistic pictures of the plague of London must be added the Asiatic peculiarities. There is the funereal pyre of the Hindu for ghastly cremation, deserted the moment it is lit, and then abandoned to the jackals and the vultures. There is the ghoulish Mohammedan cemetery, where the bodies are tossed or dragged, and not one foot of earth covers them. So few of the living are left to remove the dead that, as in London, the death-cart goes its rounds and disposes of the victims wholesale. Two-thirds of the city's native population have died or fled, and among the remaining third there are 1100 deaths a week. Two new features which have lately appeared are the black death and the fatal infection of Europeans. The latter is chiefly due to the impossibility of nurses and physicians and benevolent persons dealing with the hundreds who crowd the hospitals, "and yet they must work on till they themselves drop." Since August 1st 500 victims a day have filled the General Plague Hospital, notwithstanding the fact that only 104 have been returned as cured in the first fortnight.

**The New York State Medical Association.**—The program of the sixteenth annual meeting of this society, to be held October 24, 25, and 26, 1899, at the New York Academy of Medicine, New York City, has been issued. It gives promise of an unusually interesting occasion. The important feature of the meeting will be the discussion, to be held Tuesday evening, October 24th, on "Medical Expert Testimony." The speakers will be Hon. Willard Bartlett, Justice of the Supreme Court; Hon. Joseph F. Daly, former Justice of the Supreme Court; Charlton T. Lewis, Esq.; William A. Purrington, Esq.; and Theron A. Wales, M.D. A discussion on "Typhoid Fever" will take place on the afternoon of Wednesday, October 25th. Papers will be read on this subject by Drs. Herman M. Biggs, W. H. Park, Wm. Osler (of Baltimore), W. H. Thomson, Reginald Fitz (of Boston), A. A. Smith, Abram Jacobi, De Lancey Rochester (of Erie County), W. W. Keen (of Philadelphia) and A. T. Hubbell (of Erie County). The individual papers on various subjects will discuss topics of practical interest. On Wednesday evening, at the Academy of Medicine, a reception will be given to the invited guests of the society, Professors W. W. Keen, William Osler, and Reginald H. Fitz. Special invitations have been sent out for this occasion.

**The Status of Therapeutics in France.**—A correspondent of the *Boston Medical and Surgical Journal*, in a

letter on this subject, paints a doleful picture of the decline of therapeutic knowledge in the rising generation of French doctors. Quoting a professor of materia medica he says: "It must be admitted that the scandal of our times is the shameful ignorance shown by an infinite number of physicians concerning the real action of drugs. Although our practitioners are pretty fair clinicians, they are almost all unaware of the true properties of the remedies which they handle every day with extraordinary heedlessness." It is admitted, however, that this is due to the skeptical attitude on the subject of drugs entertained by the professors themselves. One is quoted as saying in a lecture: "Gentlemen, when you are in practice you will see that the point that will most impress a confrère is a correct diagnosis; the patient's family will be most impressed if your prognosis turns out correctly; but you yourself will be most impressed when your treatment is followed by any improvement that you think can fairly be ascribed to it." The young doctor, therefore, when he comes to start in practice, is obliged to resort to one of two expedients: he either hurriedly learns by heart a certain number of prescriptions from some of the many books of formularies, or else he prescribes proprietary medicines. How rapidly is the profession of America drifting in the same direction?

**A Case of Cerebrospinal Rhinorrhea.**—Dr. St. Clair Thomson of London presented recently before the London Laryngological Society a case in which he succeeded in demonstrating to the satisfaction of his brother specialists that the practically continuous rhinorrhea was really a discharge of subarachnoidal fluid. The discharge, except for the annoyance of its continual dropping, did not inconvenience the patient in the least. On the contrary, vague pains in the head from which the woman suffered before the establishment of the discharge have since ceased, and only return when for some reason there is a temporary obstruction to the flow. Dr. Thomson has succeeded in finding in medical literature reports of some twenty cases, which he thinks should be classified in the same category with the one he has had under observation. Most of them have been described simply as persistent "dropping of watery fluid from the nose." Beyond the fact that this is an actual cerebrospinal rhinorrhea, very little is known. Dr. Thomson himself thinks that it is probable that the fluid finds its way from the subarachnoid space at the base of the skull, within the perineural sheaths of the branches of the olfactory nerves, though of course the possibility of its finding its way by some other route cannot be denied. He thinks that the condition is always associated with increased intracerebral pressure. Of the twenty-one patients, including his own, no less than seventeen presented some cerebral symptoms, and eight of them showed retinal changes.

**The Mosquito as a Disseminator of Malaria.**—Of great interest was the paper by Professor Grassi of Rome, presented at the meeting of the German Naturalists and Physicians, recently held at Munich, concerning the inoculation of malaria through the study of

the *anopheles*. According to Grassi, Koch has simply repeated the investigations and confirmed the results of Ross and Bögelin, and has made no direct experiments on man. Such, however, were made by Grassi and his co-workers, Bignani, Bartianelli, and Dionissi, in the damp, feverish surroundings of Rome, and through study of the zoological side of the question very weighty results were obtained. Grassi differentiated three species of parasites found in the red blood-corpuscles, namely, *hämameba malaria*, *vivax* and *precox*. In all three species, which by many are looked upon as one, an asexual multiplication takes place in the blood of man, and finally so-called half-moon forms, with flagellæ, are seen. As in other protozoa, so also in the malarial parasite sexual multiplication finally occurs. This takes place in the blood after its ingestion by the mosquito. The flagellated crescents are the spermatoids and other larger bodies, the ovoids. In the mosquito fertilization follows, while in man the forms remain sterile. From this union there is found in the intestine of the mosquito a gregarinaceous stage, in which the young sporozoa develop. These finally become freed, are absorbed, and find their way to the salivary glands, so that when the mosquito stings they are injected into man, and the cycle is again completed. This occurs only with the mosquito known as *anopheles*, and not, as Koch believes, in the *apicus culex*, since experiments with the latter have always given negative results. For the development usually a temperature not less than 16° C. is required, and better 20° or more, which is found in the mosquito. From January to May the forms are absent in the mosquito.

The Plague Situation has not improved. Fresh cases of plague continue to occur at Oporto in Portugal. Soldiers engaged in duty with the military cordon have developed plague. Moreover, outside the military cordon, 10 cases and 5 deaths have occurred at two villages. In consequence of these outbreaks the cordon of troops has been extended. This is the old story: the cordon serves but to spread the disease, and is a form of quarantine which ought to be discredited and forbidden. During September there were 17 cases of plague altogether in Oporto and 4 deaths from the disease. There is no news of plague in any other part of the Peninsula. There are certain persistent rumors that cases have occurred and are occurring in France, but they seem no more than the merest rumors. France has wakened to the danger on her Mediterranean coast. On her northern coast, too, special precautions are being taken. The *British Medical Journal* for October 7, 1899, says: "The plague epidemic at Oporto continues to cause anxiety to the French Government. All along the coast, from Brest to Hendaye, warnings have been issued to the fishermen to refrain from visiting the northern ports of Spain and Portugal, whither they are accustomed to go in search of bait. Not a single death has occurred among the patients who were inoculated with the serum from the Pasteur Institute, and Dr. Metchnikoff declares that France need have no fear of an epidemic, and that it was only due to the stupidity of the Portuguese authorities that the epidemic was continuing

to prevail. On October 14th, a case of plague was discovered at Plymouth, England, on board a vessel which had just arrived from Bombay."

At Alexandria a repetition of the usual game of hide and seek on the part of the plague has occurred again. The city was officially reported free of plague in September when, on the 23d of that month two new cases occurred. Once more the absolute banishment of the disease was announced, but last week, at least one fresh case appeared. The situation in India is decidedly improved and would look very hopeful but for the fact that among the new cases being reported each day there is usually one or more among the white population. They have up to this time, been reasonably immune to the disease, but the epidemic has evidently acquired sufficient virulence to overcome this immunity. The *British Medical Journal* in the last issue that reached us sums up the state affairs in India as follows: "During the second week in September the total plague mortality amounted to 4094 in the Bombay presidency alone, and of these well-nigh one-fifth occurred in the city of Poona. In Calcutta during the period referred to 45 deaths occurred. In Poona the virulence of the epidemic is expended and the city is beginning to resume its normal appearance. Several officers of the Royal Scots Regiment have suffered from plague in Poona." The disease has subsided at least temporarily on the Chinese coast. At Mauritius it still rages severely. During the last week in September 55 fresh cases and 47 deaths occurred on the Island. At the beginning of October it was raging with the same virulence.

#### MEDICAL MATTERS IN NEW YORK.

DEATH OF DR. JIMINEZ—SMALLPOX IN A BATTERY TENEMENT—A FRAUDULANT SOLICITOR FOR HOSPITAL FUNDS—MEDICAL "SCHOOL INSPECTION"—CITY AID FOR PRIVATE CHARITIES.

DR. PEDRO Y. JIMINEZ, a Puerto Rican of noble birth, who until recently was a house surgeon at the Columbus Hospital in this city, died on October 7th. He was a Bellevue graduate.

A Syrian immigrant, who had come from Europe only a week before his death, died from smallpox on North Brother's Island October 9th. He had been living in a Battery tenement with some 300 other people, and the inmates are being carefully watched for the occurrence of additional cases of the disease.

A sleek-looking individual in clerical garb has been soliciting contributions for the German Hospital and Dispensary. This hospital does not employ any person to solicit subscriptions, and it is hoped this swindler will be apprehended and jailed.

Dr. Henry G. McAdam read a paper before the City (Charity) Hospital Alumni recently on "The Benefits of Medical Public School Inspection." This movement was begun under President Wilson of the Health Board of New York City in 1897. During the first three months of the inspection 2637 children suffering from contagious diseases were excluded from school. In 1898 the average total attendance per day was 456,394. There were re-

ferred for examination 139,965 children, of whom 7606 were excluded, with the following distribution:

Parasitic diseases of the head.....	3502
Contagious eye diseases.....	1627
Skin diseases.....	703
Mumps.....	517
Chicken-pox.....	380
Whooping-cough.....	276
Measles.....	253
Parasitic diseases of the body.....	152
Diphtheria.....	118
Scarlet fever.....	32
Croup.....	25
Miscellaneous.....	21
Total.....	7606

It has been no uncommon thing in the past to see public schools closed because of epidemics among the children; under the present system this has already become an impossibility. The value of this inspection as regards the suppression of contagious diseases throughout the city generally, though it cannot be measured, is no doubt very great.

Representatives of many private charitable institutions were present at the meeting of the Board of Estimate on October 13th, when the final items in the city budget for 1900 were considered. A synopsis of the suggestions made by Comptroller Coler in his report of September 1st, and of the resolution which he offered in connection with the report, were read, and the representatives of the institutions interested were asked to express their opinions. Nearly all spoke in favor of the recommendations. Only Henry W. Maxwell of the Long Island College Hospital and Mrs. E. V. V. Knox of the American Female Guardian Society spoke in opposition to them. The Comptroller's plans were modified at the suggestion of the Mayor, so that as read, they excluded the apportionment of all public money for private charities from the budget, but not from the Excise Tax Fund, the Concert License Fund, and the School Fund; that all institutions caring for children receive aid at the rate of \$2 a week for each child; that hospitals receive aid at the rate of \$1 a day for surgical, and 70 cents a day for medical patients; that no out-door relief be aided; that aid to various miscellaneous charities be cut down one-half next year and stopped thereafter; that separate accounts of disbursements of money received from public and private sources be kept; that payment be made only for the care of persons accepted by the Department of Charities as a public charge; that the institutions receiving aid be open to inspection; and that the Comptroller be empowered to recommend to the Board of Estimate the stoppage of aid to any particular institution whenever the public interest demands it.

Isaac Stern, Vice-President of Mount Sinai Hospital, informed the Board that his institution asks for the same amount for next year as it received this. When asked if he had any objections to the Comptroller's suggestions he answered: "Not at all. By the Comptroller's plan we would get 70 cents a day. At present we get 40 cents a day." At this the Mayor opened his eyes, and he wondered why 40 cents was not sufficient.

The Comptroller also offered a resolution, to which the Board assented, by which the accounts of all charitable institutions receiving public moneys shall hereafter be so kept as to show the receipts and expenditures of public moneys separately from the other funds of such institutions, and that all institutions shall keep an exact record, to be corrected from time to time, in a form to be approved by the Comptroller, showing the addresses of the parents, guardians, or nearest relatives of inmates, and other information designed to facilitate inquiry into their financial ability to provide for such inmates.

## CORRESPONDENCE.

### PUERTO RICO IN TIMES OF PEACE.

[From a Special Correspondent.]

YABUCOA AFTER THE HURRICANE—REVOLTING CONDITION OF THE INJURED—PLUCK AND PERSEVERENCE OF AN AMERICAN MEDICAL MAN—SHIFTLESSNESS OF THE NATIVE PEURTO RICANS.

SAN JUAN, PEURTO RICO, OCTOBER 5, 1899.

IT may probably be of interest to give a few particulars of an experience I have had recently in the district of Yabucoa, Peurto Rico. It will be remembered that this section felt the full force of the hurricane, and that Yabucoa was the only town on the island that was totally obliterated; therefore, the need for help was urgent, especially in the line of medical assistance.

Responding to an appeal from the Board of Charities for medical volunteers, a few days after the storm I found myself where the town had been. One building alone, a church, was standing, and it had been turned into a hospital for the large number of wounded. It must be borne in mind that this so-called hospital was merely a shelter, and an imperfect one at that, every door having been carried away, and part of the roof badly damaged. I found the following horrible condition of things: More than ninety wounded men, women, and children were lying promiscuously on the stone floor. No attempt had been made to separate the sexes, and there was absolutely no provision for the relief of natural wants. As there was practically no medical attendance, and actually no medical supplies, the wounds were almost universally in a condition that no young medical man is ever likely to have seen. Fancy the state of the floor as a result of scores of sloughing, stinking wounds, and the solid and liquid evacuations of a hundred people!

It was enough to discourage a man, but something had to be done and that quickly. First I separated the sexes, and made some kind of provision for sanitary needs, and had thorough cleansing and disinfection of the floor carried out. Next in order came the work of examining and diagnosing the injuries, most of which were severe, and many of the most ghastly description. The scalp wounds were unusually horrible, as no suturing had been done, and every wound was widely gaping, often to the extent of several inches. Compound fractures of the leg and arm were very numerous, and of these some were of such a nature that amputation was the only resort. There were examples of almost every conceivable surgical injury to be

found in the crowd, and for the moment I almost despaired of being able to do anything of consequence with the limited appliances at my disposal. However, I made the best of it; turned the organ gallery into an operating-room, the space inside the altar-rails into a dressing-room for those able to walk, and the altar itself was converted into a table for the bandages and the other surgical appliances. With the aid of two or three volunteer assistants every wound was thoroughly irrigated with bichlorid-of-mercury solution, and dressed with carbolized and boric ointment. Such wounds as were suitable were sutured, and others fixed with adhesive plaster and bandages. Splints were improvised from various materials, and all fractures properly set, to the immense relief of the unfortunate patients.

Although I had gone to Yabucoa solely with the intention of offering my services to the local medical men, I found myself unexpectedly placed in the position of surgeon to a military hospital, and at once determined to run the concern on purely military lines. My former army experience made this easy, and in less than a week the hospital was one in reality, and running like clockwork. A kitchen was extemporized from some of the debris, closets were built for men and women, and the feeding of the patients carried out on business lines. The most rigid discipline was necessary, and was strictly enforced, for otherwise any decency or order would have been impossible. Fortunately I was allowed a free hand by the local authorities, and my word was law. For the first few days the work was cruelly severe, but I afterward obtained the help of two Hospital Corps men, and my burden was greatly lessened. Of course antiseptic surgery as commonly understood was impossible, and we could only trust to the greatest possible cleanliness as a substitute; but in spite of the imperfect asepsis and the abominable filth of the patients and of their clothing, the results were really remarkable, and healing progressed in every case almost as rapidly as if the environments were ideally perfect. Only two deaths occurred from wounds after I took charge, one being in a case of secondary amputation of the thigh in a young woman five-months' pregnant. She did well for ten days when she miscarried and died the next day in convulsions. The other case was that of a young man whose knee-joint was literally smashed to atoms and who was dying of septic fever when I first saw him.

Even the worst cases of compound fracture did well under the simplest treatment, and I attribute much of the remarkable result to the fact that the patients were living practically in the open air. Besides this, they were receiving more and better food than they ever had in their lives, and to this fact great weight attaches. Rice, beans, and coffee comprised the bill of fare for the great majority, milk, eggs, etc., being issued to a few special patients. A quantity of different foods was sent me, but, strange to say, none of the patients would touch any of them. Oatmeal, Boston beans, corned beef, canned tomatoes etc., were valueless in their eyes, and I had to trade these off in the town for coffee or other suitable articles. I may call attention to two striking features in the char-

acter of the Puerto Rican of the poor class: one is the absolute indifference to the suffering of others; the other is a total absence of a sense of decency or modesty. Nothing but the utmost severity enabled me to keep under control their bestial impulses, but one or two public examples gave them to understand that they had at least to conform to civilized ideas. On the whole the character of the Puerto Rican is a singularly unlovely one, and any one expecting to find in them the sweet and gentle traits so persistently attributed to them by well-meaning people who don't know them will very quickly be disillusioned. The lower classes are universally immoral, or rather unmoral, are indescribably lazy, and will steal anything not too heavy to lift. Even my instruments were not sacred in the eyes of the people in whose service they were used, and I lost a number of them. Rations were stolen at every point, and to such an extent had laziness been cultivated by the lavish food distribution that it was impossible to get any work done even for fair wages. The ladies of Yabucoa had to do their own washing, as the laundresses were perfectly content to live in idleness at Uncle Sam's expense just as long as he did not object. Every intelligent man is delighted at the prospect of an early stoppage of rations in the sugar district, for he well knows that there is not the most remote chance of any one dying from starvation except as a suicide. In the coffee districts relief may be required for some time to come, but in districts like Yabucoa and Maunabo the need for relief has happily passed away.

In conclusion I wish to express my hearty thanks to Colonel J. V. R. Hogg, U. S. A., President of the Board of Charities for the prompt and liberal way in which he answered my demands on him. Also to Captain E. Swift, commanding officer of the district, and to Assistant Surgeon Russell, U. S. A., for every moral and material assistance that could be afforded. But for such aid my work would have been a failure, and I am anxious that a full share of the credit should be given where it belongs.

W. F. SMITH, M.D.

#### OUR LONDON LETTER.

[From Our Special Correspondent.]

OPENING OF MEDICAL SCHOOLS—OPIUM IN THE ENGLISH FENS—POST-MORTEM REVELATIONS OF SYPHILIS—IMAGINATION IN MEDICINE AND IN MARQUISES—SANITARY SCANDALS AMONG HOP-PICKERS—SNAP DIAGNOSIS OF BULBAR PARALYSIS—SELF-POISONING BY A DOCTOR—HEREDITY AND DRUNKENNESS—ALLEGED "BRUTALITY" OF DR. LAMONT TOWARD THE BODY OF A PAUPER—BARBAROUS COWARDICE IN SOUTH UIST EPIDEMIC.

LONDON, October 8, 1899.

WITH the opening of the great hospital medical schools last week the London medical "season" began. With a depressing lack of originality, all of them opened at the same hour of the same day, and on a Monday at that. Instead of avoiding the first day of the working-week as a point of departure, as has become, for obvious reasons of convenience, the unwritten law of all our American medical colleges, they seem positively to pre-

fer it. The smallness of the country and shortness of the average railway journey may have something to do with it, but the iron hand of custom has probably more. It's a sort of inheritance from boyhood's hour, and the tradition of the boarding-school which invariably began on "Blue Monday."

Nearly all of the schools usher in the year with a solemn Address, delivered by some celebrity, if possible from their own alumni, and several of them have the curious habit of holding their annual Dinner (this word is always to be spelled with a capital D in public, in England) the evening following this cheerful ceremony, just such a "class reunion" as we hold at the other end of the year. Every medical school (a "college" in the insular tongue is an examining body) in London is an appendage to a hospital instead of the hospital being an appendage to the school, as it should be. Practically, no one can become a teacher in any of the schools, except in the purely scientific branches in some cases, without first getting on the staff of the hospital, so that the choice of lecturers and teachers is largely controlled by the lay governors of the hospital, many of whom are not merely ignorant of the needs of medical teaching but even unfriendly to its interests.

A curious item has been going the rounds of the London papers in regard to the opium habit in England. It is alleged that in several of the rural districts the regular use of opium in moderate doses is not uncommon. Certain it is that it is the favorite article chosen by Oriental sailors for smuggling into London. The region most addicted to its use is said to be the fen district of Lincolnshire and Cambridge. And this may have a distinct pathological basis, inasmuch as this region was the last in England to get rid of ague by the draining of its famous fens, or huge swampy levels, and opium is esteemed highly the world over by the native populations as a prophylactic against malaria.

A case illustrating both the worthlessness of even utterly negative evidence in conditions of suspected syphilitic origin, and also the dramatic way in which medical "murder" like the other variety "will out" was related by Mr. Jonathan Hutchinson at his last clinical demonstration at the Polyclinic. A number of years ago he was consulted by an intelligent farmer for an attack of ophthalmoplegia externa. The case was an extremely severe one, every trace of contractile power in all the recti muscles being lost so that the eyes were as immovably fixed as those of a graven image. The usual syphilitic origin was suspected, but the patient absolutely denied it, and the most searching inquiry and examinations failed to discover a shred of evidence of venereal disease. The man was even asked to bring his children up for examination, and brought with him two fine, well-grown healthy lads, without a trace of hereditary taint, so that Mr. Hutchinson finally believed his statements and had to confess that ophthalmoplegia externa was sometimes of non-specific origin. A year or two later the patient died, and a post-mortem was secured, but nothing was found to throw any further light on the question of causation. Several years passed and the lecturer had almost forgotten the case when one day a physician in the north of London

wrote to him saying that he had just seen the daughter of this farmer professionally, and as she seemed to present distinct suggestions of hereditary syphilis, he, remembering Mr. Hutchinson's interest in her father's case, thought he might like to see her. Upon examination she was found to present a typical picture of inherited disease, in teeth, lips, and nose, and her threatened eye-trouble developed into a severe attack of interstitial keratitis.

It turned out that the unfortunate girl was the first-born of the family, and several years older than the boys seen by Mr. Hutchinson, during which interval the disease had apparently run its course past the infective stage.

England is having a perfect plethora of sanitary congresses. The echoes of the national gathering at Southampton have scarcely died away, and now there has been another in session, the Royal Institute of Public Health, at Blackpool, near Liverpool. This was opened by no less than a son-in-law and "poorer half" of royalty, the Marquis of Lorne, husband of the Princess Louise and the late Governor-General of Canada. His speech was a marvel of ingenious credulity, as might have been expected of a son of the Duke of Argyll. He took for his subject the influence of the imagination in disease and drew on his own liberally.

The wireless electric current has at last explained telepathy, thought transference, "absent treatment," etc., and ere long perchance the "directing will" of the physician will be all that is needed, and his actual appearance at the bedside no longer required, except perhaps in surgical cases, and even here healing might be hastened and antiseptics aided, by inducing such thoughts as would support the body and lead to recovery! Fancy thought as an antiseptic! Some of it is sterile enough, in all conscience, but we had never thought of it as a germicide!

Not only are the modern "mysteries" of thought-healing, etc., to be explained by wireless telegraphy—how the good Lord—Lorne only knows—but the marvels of the Ancients, also, Egyptian magic in particular. "What," asks our Marquis dramatically, "was the secret of Egyptian magic?" The same old secret, that of the priests in all ages, how to fool the people and get a fat living out of the process. Some delighted idiot is sure to hail each new discovery "electricity," Röntgen-rays, Marconi current, as "explaining" something that never happened or demonstrating the truth of some exploded humbug.

It is alleged that if the plague were to gain a footing in England there is one place on the Island where it would find itself thoroughly at home and in surroundings as superbly filthy as the houses of the Middle Ages, and this is the part of Kent now inhabited by the dense swarms of hop-pickers from the London slums. Many of these camp in wretched hovels, unlighted save by the door, with no furniture and nothing but straw on the earth floor to sleep on. As the dens are only used for a few weeks once a year the farmers will not trouble to provide anything better, and such is the crowding that from six to ten of the pickers will sleep in a cubby-hole not more than

ten feet square. And the straw, like the rushes of the Middle Ages, is made to cover all sorts of offal and excreta. To tolerate this state of affairs is a disgrace to England's sanitary reputation.

A new diagnostic symptom of bulbar paralysis is credited to Dr. Hughlings Jackson: "If the patient comes into the room with a slate in one hand and a large pocket handkerchief in the other, then you may diagnose bulbar paralysis at sight," and the touch is a most graphic one, for usually, all these unfortunates as soon as the disease is well advanced are obliged to use a slate for conversation purposes on account of the involvement of the laryngeal muscles, and a handkerchief constantly to soak up the steady drip of saliva from their hanging lips.

The late Inebriates Act, which was regarded as such a long step in advance, and for which the late Dr. Norman Kerr and many other medical advocates of temperance reform worked so hard, is proving a dead letter. And this by a most senseless failure on the part of the government or rather a succession of them. The Act authorizes magistrates and judges to commit habitual drunkards to reformatory institutions for a term of years. As first drawn it contained no provision for either the expense of the prosecutions or the support of the inebriate while in the reformatory. This was remedied at the next session of Parliament, but no provision made for building reformatories, only permission given to utilize those already existing. As those "already existing" prove on investigation to have room for barely one-fifth of those convicted so far, the Act is simply "hung up," and the magistrates are refusing to commit under it.

A most singular and tragic fatality has recently occurred in the profession here. A young physician at Eastbourne, Dr. John Dick, was fatally poisoned with a dose of his own medicine. It is proverbially unsafe to compound one's own prescriptions, but seldom is it followed by such bad results. The doctor was consulted by a patient, and deciding that she needed a tonic, he prepared and sent her a bottle of medicine. Next morning the patient took a dose of the mixture, and such severe cramping pains followed that she became alarmed and called in another physician. Later in the day Dr. Dick called at her house and she told him what had happened. Not unnaturally annoyed he declared that it certainly could not have been the medicine, and to prove it he would take some of it himself. This he did and in a few minutes repeated the dose. But before he could reach his house, a mile away, he was in strychnin convulsions, and though with great coolness and courage he called for his own stomach-pump and emptied his stomach, in spite of this and the utmost efforts of three of his colleagues, he died in a few hours. The tonic was found to contain a large amount of strychnin, which the unfortunate young fellow had probably put in, in mistake for some other white powder, or by one of those curious fits of absentmindedness to which all are liable added to the mixture twice or three times instead of once. The only moral appears to be, "don't dispense your own medicines, or if you do never use your strychnin in powder form but always in solution." The wonder is that so few accidents of this

sort happen.

Dr. Archdall Reid has done a real service by his recent paper on "Alcoholism and Heredity," in calling the attention of the profession to the undoubted but often ignored fact that nations do not tend to become more drunken as time goes by but rather the contrary. Nearly all the nations of antiquity were at one time intemperate as their records show, and then became extremely moderate in the use of alcohol, as for instance, the Jews and the Egyptians are at the present day. All modern nations which have had the vine for long periods are now sober and even abstemious, as the Spaniards, the Italians, and the Southern French. Only we recent barbarians of the North who have had plenty of liquor for hardly five hundred years are now drunken. And we too in time shall become temperate, and useless, like the rest. Drunkenness is not inherited, first, because it is an acquired character, and second, because it is an unfavorable variation which tends to promote the elimination of those in whom it occurs.

The more the *cause celebre* of Dr. Lamont is looked into the more astonishing it becomes. It will be remembered that some months ago he as parish-doctor of South Uist, on the West Coast of Scotland, was suddenly arrested upon the flimsy charge of having issued vaccination certificates to children whose arms showed imperfect scars, kept in jail two or three days and dismissed in disgrace from his position, all by the Parish Council. So outrageous was the injustice of their course that the matter was actually brought before Parliament which passed a scathing vote of censure and promised substantial compensation to Dr. Lamont. Thereupon the Council suddenly changed its ground and announced that he had been dismissed on account of brutal and revolting treatment of the body of a pauper in preparing it for burial, dragging it out of the house by a rope tied to one leg, thrusting it naked into its coffin, and inflicting other indignities. This seemed so incredible that one's first thought was that the Parish Council had gone crazy, but now comes the report of the investigation committee of the Local Government Board and turns the tables with a vengeance. The body in question was that of an old woman who died in an epidemic of typhoid which had so terrified the cowardly natives that neither health officer, nurse, or relatives could be induced to go near many of the victims in their last days, and Dr. Lamont had been obliged to play the superhuman rôle of *physician, nurse, and undertaker to all of them*. It was the public and shameful rebuke which he had thus given the cowardice and inhumanity of the islanders and their officials which got into the papers and brought down upon them the severe rebuke of the Local Government Board that was the real cause of the reckless rancor with which the Parish Council had pursued him.

There was bitter truth in their description of the terrible coffining scene, but it did not cut Dr. Lamont. The fact simply was that out of fifty or more people assembled not one could be induced to go within fifty yards of the house, except the joiner who had made the coffin, and who had refused to touch the body, so that as the corpse was a

heavy one, the only thing Dr. Lamont could do was to convey the coffin himself to the door, get out the body by a rope which his semi-assistant was willing to pull on, though he refused to touch the corpse, rolled it as best he might into the coffin, and then nailed the lid down himself as his joiner-assistant had fled by this time.

Then and then only he succeeded in shaming the crowd of cowardly savages, who, according to the Parish Council's report had been "kneeling in prayer," that he might be forgiven for his brutal treatment of the corpse, into lifting the coffin by long ropes and carrying it to the grave. Really we think that by this time even the thick-headed barbarians at South Uist, must be beginning to realize that by prosecuting Dr. Lamont they have simply pilloried themselves to the shame of the country and world.

## SOCIETY PROCEEDINGS.

### MISSISSIPPI VALLEY MEDICAL ASSOCIATION.

*Proceedings of the Twenty-fifth Annual Meeting, Held at Chicago, October 4, 5, and 6, 1899.*

(Continued from page 512.)

#### MEDICAL SECTION.

DR. CHARLES T. MCCLINTOCK of Detroit, Michigan, in the Chair.

DR. MCCLINTOCK read a paper on

#### ENZYMES AND IMMUNITY

in which he deduced the fact that the enzymes are unorganized ferments and are directly responsible for immunity.

DR. L. H. WARNER of Brooklyn read a paper on

#### RECENT PHYSIOCHEMIC RESEARCHES AS TO THE PHYSIOLOGIC ACTION OF LECITHIN AND OTHER PHOSPHOROUS COMPOUNDS.

By means of numerous experiments he has demonstrated that the organic phosphorous compounds are tissue-builders, performing an important part in the tissue metabolism, especially in the causation of subsequent changes in the animal cells and controlling the formation of tissue. No abnormal conditions result if food contains a sufficient amount of lecithin, phosphocarnic acid and other phosphorous compounds. The most marked beneficial results follow their use and are, therefore, indicated in the treatment of all wasting diseases. Lecithin is always found in mother's milk, in lesser quantities in cow's milk, and rarely ever in the artificial infant's food, hence their inefficiency. Organic phosphates, lecithin and phosphocarnic acid are necessary in order to maintain perfect health. These salts are derived from any of the body tissues and especially from beef when they are to be added to any artificial foods.

DR. WILLIAM B. BURNS of Deckerville, Ark., read a paper on

#### SOME PHASES OF MALARIA.

The author was of the opinion that malarial and typhoid fevers are never present in any one individual at the

same time; furthermore, he made the positive statement that any fever which does not yield to the proper administration of quinin is not malarial, and if typhoid has been excluded by diagnosis, the condition is due to an auto-intoxication. He cited one case of malaria in which the patient developed marked purpura hemorrhagica and hemoglobinuria which responded readily to the use of quinin and tincture of the perchlorid of iron. Another case simulating pneumonia, with the hematazoon present in the blood of the patient, however, also yielded to alternative treatment and quinin. Symptoms of abnormal renal function, such as albuminuria and hemoglobinuria, so often found in malarial cachexia, completely disappeared after the use of quinin. He has not been able to demonstrate the malarial organism in any stage of development in the mosquito, although he has found an abundance of pigment, but not of the malarial variety. He administers quinin in from 3- to 5-grain doses, every three hours, for from twenty-four to forty-eight hours, beginning at the commencement of the decline of the fever, as the plasmodium at this time is less capable of resistance and phagocytosis is at its best. In malarial cachexia quinin should be administered in 3- to 5-grain doses three times daily, preferably on a full stomach in order to avoid tinnitus and nervousness. Relapses may be prevented by 10-grain doses on the fifth, sixth, and seventh days, given at bed-time.

DR. D. H. WARNER of Brooklyn remarked that Dr. Burns was bold in saying that any fever which does not yield to quinin is not malarial. Quinin is a poison only to the full-grown germ, but does not kill the spore, consequently if given for thirty to forty days it kills the germ but the spore escapes, and it may lie dormant for years, until a favorable moment arrives for it to develop and give rise to a paroxysm. The amount of chlorids in the blood constituents and in the blood-plasma exceed the total amount of sulphates and chlorids. The parasite attacks the red blood-corpusele and destroys it. Now, if there is a superabundance of chlorids the corpuscles are not destroyed; therefore, one must administer chlorin, and it will destroy not only the organism but its spores as well.

Patients coming from the hot-beds of malaria were dosed with quinin up to 40 grains at a time, and still the parasite grew, but as soon as the patients were put under treatment with quinin simplex plus chlorin, or chlorin plain, there was neither organism nor spore left. The speaker thought that chlorin is one of the most important factors in the treatment of malaria, and it may be used alone or with quinin plain, but not with the sulphate.

DR. CHARLES L. MINOR of Asheville, N. C., read a paper, entitled

#### THE SUCCESSFUL TREATMENT OF A CASE OF GRAVES' DISEASE AS AN AUTO-INTOXICATION.

After reviewing the various theories of the etiology of Graves' disease, and especially the thyrogenic theory, he reported two cases in which he treated the patients on the supposition that the disease is dependent on an intestinal auto-intoxication. A positive cure resulted in one

of them. He based his belief on the constant presence in excess of ptomaines in the intestine and their violent effects on the system, and especially on the gastro-intestinal tract. Treatment consisted of a strictly regulated diet, in which the starches, sugar, and table dainties were cut down to a minimum or entirely eliminated; rest at first, followed by carefully graded exercise, and good hygiene. Medication consisted of the administration of lactate or albuminate of iron, antiferments at meal-time, an occasional mercurial purge, and intestinal lavage, to which he has given the unique name of "liver wash." Large quantities of water, at a temperature of 102° F., were used and were retained half an hour. This increased the liver activity, and all the emunctories were stimulated, thus effectually eliminating all toxins. Lavage was continued at intervals for more than a year, and in one case was followed by an apparently complete return to health except for a slight almost imperceptible prominence of the thyroid. The second patient, while still presenting objective symptoms, is entirely free from any subjective symptoms.

DR. GEORGE W. WEBSTER of Chicago remarked that the treatment at present is based on an increased activity of the thyroid gland with altered secretion, which acts on an unusually susceptible nervous system. He referred to a reported case in which the patient had been treated by injections of bile to the amount of 100 grains a day on the supposition that bile acts as an antiseptic, a cure resulting. At the same time he called attention to the fact that nearly 50 per cent. of these patients get well without any treatment whatever, others by surgical means, and still others by means of various medicinal agents. This does not furnish any clue, however, as to the real cause for the increase and perversion of the thyroid activity.

DR. HUGH T. PATRICK of Chicago did not agree with Dr. Minor in that the poisons generated in the intestinal tract and which are absorbed from it play any part in the causation of Grave's disease. These noxious substances from the bowel are etiologic factors only in so far as is alcohol, syphilis, over-exertion, etc., in any other disease, and to draw conclusions from only two cases is a practice which is not to be recommended in medical research. Proper care must be bestowed on the intestinal tract in any disease and the numerous investigators on this subject have as yet not been able to adduce anything which might be considered as a positive proof that auto-intoxication of the intestinal tract can have any bearing as a cause of Graves' disease.

After briefly referring to the various methods of treatment of this condition, the speaker mentioned one case in which the patient had been subjected to every known treatment without avail and was finally taken home in a very serious condition. All treatment was discontinued and inside of three months the patient had perfectly recovered.

DR. HOMER M. THOMAS of Chicago then read a paper on

#### THE TREATMENT OF PULMONARY TUBERCULOSIS BY THE INHALATION OF ANTISEPTIC NEBULÆ.

Nebulization is supportive only, but is of great value as

a secondary factor in the treatment of tuberculosis. It aids in establishing a barrier around the tubercular area by stimulating cellular structure to resist the germs and their toxins. The beneficial effects of nebulization are, first, control of cough; second, relief of dyspnea; third, intimate contact of the nebulae with much of the respiratory cavity; fourth, inhibition to the extension of the tubercular foci.

The cough is best relieved by tincture of *stillingia* and beechwood creosote with a lanolin base; for dyspnea expectorant combinations with carbonate of ammonia, syrup of squills and *prunus Virginiana* with lanolin for a base. Various other remedies were mentioned, and special attention was called to formalin in from 40- to 20-per-cent. solution, depending upon the patient's ability to bear the use of a weak or strong solution. The nebulae penetrate wherever the air does and by means of phagocytosis are conveyed through the blood and lymphatics to the tubercular overgrowth. While the nebulae do not reach the encapsulated tubercular area, they inhibit extension of the disease. The atmosphere of the room as well as the respiratory passages must be saturated with the medicament. Clinical experience having proved the value of vaporized medicaments in tuberculosis further trial and investigation is justifiable.

DR. T. B. GREENLY of Meadow Lawn, Ky., commended the paper, and stated that for some time past he had been using a mixture of formaldehyd and ammonia with the most salutary results. The ammonia enables the patient to bear more of the formaldehyd vapor, and the system thus becomes immune more rapidly to the toxins of the tubercle bacillus. He has lately been using urotropin, a combination of formaldehyd and ammonia, and inside of ten to fifteen days it thoroughly disinfects the sputum so that it is absolutely free from bacilli. This treatment, with the addition of tonics, increases the patient's appetite, the cavities heal more rapidly, and a speedy recovery results. Urotropin acts equally as well in bone tuberculosis. In phthisis he also uses iodine and theobromin with massage twice daily so as to secure the action of the iodine in the circulation without imposing on the stomach. Perfect satisfaction has followed this treatment in his experience with more than 100 cases of tuberculosis.

DR. CHARLES L. MINOR called attention to the fact that a combination of formaldehyd and ammonia completely destroys the action of the former, and therefore the good results which Dr. Greenly obtained could not have been due to the inhalation of formaldehyd. He expressed his gratification that Dr. Thomas regarded the inhalation of medicated vapors as an adjuvant only. In his experience patients who inhale simply the air around them do as well as though medicated vapors have been used, and pure air has the advantage of not producing any irritation whatever.

DR. J. M. PATTON of Chicago congratulated the essayist on his conservative view of the therapeutic effects of inhalation of medicated vapors. Neither inhalation nor the injection of different oils into the respiratory tract have given any definite results as far as a cure is

concerned, which really cannot be expected in view of the existing pathological changes. Councilman has demonstrated a collateral zone of congestion around the tubercular area, which does not contain tubercle bacilli, but has sufficient circulation to admit of absorption and poisoning, and these areas prevent anything from reaching the tubercular area itself. The failure of serum-therapy demonstrates the futility of reaching these areas through the circulation; nevertheless, beneficial results follow the use of these measures as they lessen the cough, diminish bronchial secretion, and improve the respiratory function. In chronic bronchitis great good follows the use of vaporization, as anything that will lessen bronchial secretion will correspondingly lessen the danger of secondary infection from the tubercular areas.

As to the possibility of considerable good arising from the absorption of the vapor through the bronchial membranes into the system, the speaker thought Dr. Thomas was illogical.

DR. THOMAS expressed his gratification at hearing of the good results which Dr. Greenly had had with formaldehyd and ammonia. Inhalation is advocated only as an adjuvant, the only value, if none other, being in the deep breathing which it excites and the psychical impulse created in the use of nebulæ, which is not the case when air is used. This effort at deep breathing is very much to be desired in the impaired respiration of tuberculosis.

DR. WILLIAM O'NEAL MENDENHALL of Richmond, Ind., read a paper, entitled

#### DO WE NEED TO THINK?

He presented a report of a peculiar case of hereditary nervous diarrhea in a young man indirectly caused by a fall of the mother producing a fracture of the coccyx. Treatment consisted in the administration of strychnin to act as a nerve tonic, and ergot to act on the circular muscle fibers of the bowel, regulation of diet, and hygiene. A complete recovery resulted.

DR. A. M. OSNESS of Dayton, Ohio, read a paper, entitled

#### THE EVILS; THEIR CAUSES AND THE REMEDY THAT WILL EDIFY MEDICINE IN THE UNITED STATES.

The evils were held to be "mushroom schools," antagonistic pathies, overcrowding in the profession, lack of scientific spirit among medical teachers, undue ostentation, and unscrupulous intrigues in the profession. The causes of the evils are, first, paltry remuneration for professional services; second, the fallacy of a profitable notoriety. The author suggested as a remedy the regulation of schools and professorships, obligatory internships of all graduates, conditioning diplomas revocable for unprofessional conduct, charity hospitals to be under the supervision of medical men, and the encouragement of strictly prescription pharmacies.

DR. E. B. MONTGOMERY of Quincy, Ill., presented a paper, entitled

#### TWO CASES OF TYPHOID FEVER WITH UNUSUAL COMPLICATIONS IN VERY YOUNG CHILDREN,

which will appear in full in a subsequent issue of the MEDICAL NEWS.

DR. FENTON B. TURCK of Chicago then read a paper, entitled

#### FURTHER OBSERVATIONS ON THE TREATMENT OF THE ABDOMINAL VISCERA THROUGH THE COLON.

The paper was a very interesting one, and the author dwelt particularly on the importance of colonic lavage in the treatment of all diseased conditions of the bowel. He explained his method very fully, illustrating it by a series of experimental reports.

DR. WILLIAM BARCLAY of Pittsburgh expressed himself as being very much opposed to the indiscriminate injection of large quantities of water into the bowel. He was pleased to learn that Dr. Turck uses only a small quantity of water, as large quantities in his experience have proved to be injurious. He especially condemned the use of syringes as they destroy the muscular tone of the bowel, and a constipation is set up which is almost irremediable. Cathartics, too, are unpleasant to use, but cathartic medication in conjunction with regulation of diet is to be recommended.

DR. T. WERTZ of Evansville, Ind., said he knew of no reason why the bowel should not give out the same as any other organ. Many persons are incapacitated for business on account of constipation, and from the constant use of cathartics their stomachs have become irritable, so that they are obliged to resort to water enemas. In cases in which there is a paralysis of the bowel or insufficient peristalsis water enemas are the best agents to make use of. Many lives have been prolonged by the use of food enemas when the stomach is non-retentive and needs a rest.

DR. C. J. LEWIS of Chicago raised the question as to whether the effect of very hot and very cold water is not the same. Peristalsis is dependant upon the stimulation of Meissner's ganglia, and the extremes of temperature may produce a paralysis of it.

DR. H. M. THOMAS of Chicago said that there is a general agreement at the present time that the saprophytic bacteria in the intestinal tract are largely the cause of appendicitis. Colonic lavage facilitates diagnosis, as one needs only to unload the bowel of its accumulated bacterial infection in order to make possible more accurate palpation of the appendix, and thus determine its condition of inflammation.

DR. THOMAS J. SCHUELL of Parnell, Iowa, for many years believed himself to be the originator of colonic lavage in the treatment of appendicitis. The usual idea is to unload the cecum, but by using water at 110° F. it will not only unload the cecum and colon, but at the same time will excite peristalsis of the cecum as well as of the appendix. Many cases of appendicitis are due to impaction of the colon, producing paralysis of the muscle fibers and the formation of a ball-valve action of the cecum, and by means of a slight shock, such as jumping, the fecal matter is forced into the appendix, bacterial decomposition sets in, and inflammation, necrosis, and pus formation occur. Colonic flushings should be administered every three or four hours during the first twenty-four to thirty-six hours, and after four or five flushings beneficial results are very apparent.

DR. TURCK, in conclusion, emphasized the value of using the colon as a means of treating the abdominal viscera. It is not the quantity of water so much as the temperature which procures the characteristic reaction. Hot water draws out the water from the intestines, and the original injected quantity is thus increased. The temperature raises the body temperature two or three degrees, and, like cold, is a vasomotor stimulant. Fecal matter is a normal stimulant to peristalsis, and the same effect can be produced by artificial stimulants. This can be done by means of small quantities of water. When it is desired to produce gymnastics of the blood, hot air is used, and it acts on all abdominal viscera at the same time as a stimulant.

DR. W. V. ANDERSON of Toledo, Ohio, reported  
A CASE OF COMPLETE HERNIA OF THE PREGNANT UTERUS,

which will appear in a future issue of the MEDICAL NEWS.

DR. JOHN PUNTON of Kansas City, Mo., then read a paper, entitled

PATHOGENESIS OF FUNCTIONAL NERVE DISEASES AND ITS PROPHYLACTIC INDICATIONS.

In the pathogenesis of nervous diseases heredity stands foremost, as the results of injurious living on the part of the parents are often transmitted to the offspring. Pathological changes are produced in the blood which act on the nervous system in such a manner as to cause actual disease. In certain nervous diseases the red-blood corpuscles disintegrate and the plaques are much multiplied. Good diet and tonics tending to improve the system and the condition of the blood speedily restore health. In this connection the study of sociology ought to claim earnest attention as it is a most important factor in the causation of nervous diseases.

DR. PHILIP ZENNER of Cincinnati, Ohio, followed with a paper, entitled

THE ASSOCIATION OF HYSTERIA WITH ORGANIC DISEASES OF THE NERVOUS SYSTEM.

Organic diseases of the nervous system often follow hysteria, but are often obscured by the hysterical manifestations. Diagnosis is facilitated by noting the personality of the patient, relation of symptoms to organic diseases, and the clinical picture presented. Prominent among these are hysterical temperament, stigmata of disease, anesthesia, paralysis, contractures, and visual changes. In hysteria special attention must be given to globus hystericus—concentric contraction of the visual field. In organic disease the alteration of the deep reflexes, the rigid pupils and the action of regeneration must be noted.

DR. ALBERT E. STERNE of Indianapolis, Ind., then read a paper, entitled

TEMPERAMENT AND ITS INFLUENCE.

He divided temperament into the acid, alkaline, and neutral variety, each one of which causes diseases peculiar to itself. This study is still in its infancy but is one of vast importance in the causation of diseases of the nervous system and is deserving of further investigation.

BACTERIOLOGICAL DIAGNOSIS IN ALL DISEASES OF THE CONJUNCTIVA AND CORNEA

was the title of a paper read by DR. J. O. STILLSON of Indianapolis, Ind. Water curretage was advocated in certain ulcers of the cornea. A small stream either of sterilized water or antiseptic solution is thrown against the cornea with sufficient force to dislodge the necrosed epithelium and clean out the ulcer. This method has been pregnant with the most salutary results in the hands of the author.

DR. WILLIAM F. BARCLAY of Pittsburgh, Pa., then read a paper, entitled

INTESTINAL AUTO-INTOXICATION; ITS PREVENTION AND TREATMENT.

The following conclusions were deduced: Daily evacuation of the bowels will prevent decomposition of matter in the intestines and the subsequent occurrence of auto-intoxication. Rectal injections of water, for the purpose of producing a bowel movement, or for cleansing the bowel, were not approved of, but cathartics were recommended, especially calomel, papoid, salines, saline mineral waters, cold baths, etc. Proper food at regular intervals is very important.

DR. JAMES H. TAYLOR of Indianapolis, Ind., then read a paper on

INDIGESTION IN INFANTS AND CHILDREN.

The causes of indigestion, such as improper food and over-feeding, were discussed in detail. Treatment should consist of washing out the stomach, ridding the alimentary tract of all irritating matter, and regulating the diet and time of feeding. Absolute rest was insisted on. Medicinal treatment is not so essential. Tincture of nuxvomica and arsenite of copper should be given.

DR. R. ALEXANDER BATE of Louisville, Ky., then read a paper on

LITHIASIS.

After referring to the etiology and symptoms, he concluded by saying that the only proper treatment of this condition is the free use of salicylates and alkalies.

DR. A. H. CORDIER of Kansas City, Mo., in a paper, entitled

NEPHROLITHIASIS,

dwelt especially on the clinical diagnosis and treatment of this disease.

DR. DUDLEY S. REYNOLDS of Louisville, Ky., read a paper, entitled

THE THERAPEUTICS OF INFECTIOUS CONJUNCTIVITIS,

which will appear in a future issue of the MEDICAL NEWS.

A CONTRIBUTION TO THE STUDY OF LUNG REFLEXES, was the title of a paper read by DR. MARION K. BOWLES of Joliet, Ill. Attention was called to the fact that examination of the lung should be made more frequently in cases which are clearly not of lung disease, for it often clears up the diagnosis, as some trifling cause

may excite reflex contraction of the fine muscle-fibers. This is especially important in life-insurance examination.

The Association then adjourned, to meet at Asheville, N. C., in October, 1900.

## REVIEWS.

**PROGRESSIVE MEDICINE**—Volume III. A Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by HOBART AMORY HARE, M.D., Professor of Therapeutics and Materia Medica in Jefferson Medical College of Philadelphia. Octavo, 440 pages, 11 illustrations. Philadelphia and New York: Lea Brothers & Co., 1899.

THE third volume of this new periodical well maintains the high reputation of its predecessors. The diseases of the thorax and its viscera, including the heart, lungs and blood-vessels are reviewed by William Ewart, M.D., F.R.C.P., lecturer at St. George's Hospital and physician to the Belgrave Hospital for Children, London. Though the subject is a most hackneyed one he succeeds in giving it a very practical interest. His advocacy of the pleximeter instead of the finger in percussing, though he does not include the use of the hammer in his recommendation, is very interesting. His treatment of the whole subject of pleximetry wears a novel air. The practical points as to the use of the pleximetric bones, especially the scapula, which is seldom taken advantage of for pleximetric purposes, are evidently the result of careful personal study. He shows, too, the advantage that may be taken of the spleen as a pleximeter. When the stomach is distended with gas the "boxy" note that results over the area of the spleen because of its pleximetric qualities may be used to outline it quite as successfully as the usual dulness when distention of the stomach is absent. Auscultatory friction, as practised with the ordinary stethoscope, receives due notice. Farther on there is an interesting note on the treatment of coal-gas poisoning by oxygen inhalations. In one case in which the symptoms were very severe the patient's life seems to have been saved by this means. Whenever there were intermissions in the oxygen inhalations during the first few hours threatening symptoms recurred.

Skin diseases are reviewed by Dr. Henry W. Stelwagon. Two things seem of special interest in the chapter: one that the trend of medical opinion is setting toward definitely considering lupus erythematosus as in some way a manifestation of tuberculosis. If it is not directly due to the presence of bacilli, then to their toxins. Alopecia areata, the occurrence of patchy baldness, is now thought not to be always due to a single cause, but to represent in different patients often very varying pathological entities. At times they are due to neurotic disturbances; at times they are parasitic in origin.

Diseases of the nervous system are reviewed by Dr. Spiller. The neuron theory, which has been called into question by Nissl, is discussed and the points recently brought out in the controversy on the subject are indicated. A recent contribution to the function of the posterior column receives mention. According to this the

posterior columns transmit the sensations of cold, touch, and pressure and of the so-called muscular sense, but not of the other sensory impulses. Paralysis from chlorosis, from typhoid fever, and from various spinal symptoms that develop after intense anemia, and especially pernicious anemia, are touched upon.

Dr. Richard Norris reviews obstetrics. The interesting phase of the work done during the past year in obstetrics has been the study of the toxemia of pregnancy and its relations to the complications of gestation, especially to the kidney troubles of pregnancy, to pernicious vomiting, and to eclampsia. For hyperemesis gravidarum the necessity for absolute rest in the recumbent position is insisted on, and the rest-cure, especially that feature of it which separates the patient from her friends, is suggested as the most likely remedy in milder cases. In severe cases subcutaneous normal saline injections are advised, first, to supply the liquids so necessary for the tissues; second, to aid in the elimination of toxins; and third, to increase vascular pressure and give better blood-supply to the brain.

On the whole the book forms an excellent mirror of up-to-date practice in the subjects treated.

**CYCLOPEDIA OF THE DISEASES OF CHILDREN, MEDICAL AND SURGICAL.** Vol. V. *Supplement*. Edited by WILLIAM A. EDWARDS, M.D. Illustrated. Philadelphia: J. B. Lippincott Company, 1899.

THE editor of this book deserves great credit for the discrimination shown in the selection of contributors and for the thoroughness with which the subjects have been handled. It is a supplement to Keating's masterpiece and is up to date in every respect.

Ballantyne writes on "Congenital Disorders," "Diseases of the Newborn," and "Congenital Skin Diseases;" Rotch, on "Feeding in Infancy;" Barlow, on "Scurvy;" Osler, on "Cretinism;" Henry Morris, on "Surgical Diseases of the Kidneys;" Howard A. Kelly, on "Diseases of the Ovaries and Tubes;" Sachs, on "Amaurotic Family Idiocy;" Snell, on the "Hygiene of the Eye;" Jacobi, on "Pulmonary Tuberculosis;" and Cheadle on "Rheumatism." The wide range of the book will be shown by mentioning the following papers:—"The Mortality of Early Life," by Brothers; "Pica," by Small; "Swimming, Dancing and Bicycling," by Young and Spellissey; "Intestinal Bacteria," by Ely; "X-Rays in the Surgery of Children," by Keen.

The advances in our knowledge of the infectious diseases are all taken cognizance of except meningitis, on which subject, to our surprise, there is no contribution. While we believe the editor is wise in saying that "the majority of sick children are treated by the general practitioner," and "it has been our endeavor to hold pediatrics allied to general medicine," we cannot help remarking that a few of the articles are written too much from experience with adults. We also believe that certain articles could well have been omitted as belonging in books on hygiene, clinical methods, or the general text-books on surgery. Thus, for example, we do not see the necessity for the article on the hematocrit. Some of the papers are too long, and some repeat much of what is in the or-

iginal five volumes, but this is unavoidable, because, otherwise, the articles would scarcely be readable. The illustrations are numerous and very successfully executed. We must draw special attention to those in the articles on "Feeding," "Bicycling," "Cretinism," "Diseases of the Blood," "Appendicitis," the "X-Rays," and the plates showing the changes in the fundus in amaurotic family idiocy. The last is taken from Frost's Atlas; in a new edition it would be wise to have it in colors.

All in all, the volume is a most welcome one. It is not only a supplement to Keating's Cyclopedia, but to every book on children's diseases and internal medicine.

**LEITFADEN FÜR DEN GYNAEKOLOGISCHEN OPERATIONSKURS** (ELEMENTS OF GYNCOLOGICAL OPERATIONS). VON DR. E. G. ORTHMANN, Berlin. Leipzig: Arthur Georgi, 1899.

ONE does not frequently find in a work as small as this the elements of completeness and thoroughness which characterize Dr. Orthmann's book. This is not surprising, however, to one who has taken with Dr. Orthmann the course in gynecological operations which is outlined by the author. It is complete and modern and embraces all operations in the specialty which one is called upon to perform. The book reflects the practical work and by means of the numerous and well-executed cuts makes the details of the various procedures easy of comprehension. To the student or practitioner who is familiar with German this little work can be heartily commended, especially since it represents the methods of Professor August Martin, one of the most famous and original operators among German gynecologists.

**AMERICAN POCKET MEDICAL DICTIONARY.** Edited by W. A. NEWMAN DORLAND, A.M., M.D., Assistant Obstetrician to the Hospital of the University of Pennsylvania. Second edition. Philadelphia: W. B. Saunders, 1899.

THE present edition of this dictionary does not differ from its predecessor except in the addition of newer words which have found their way into medical nomenclature. Although it does not pretend to supplant larger works of a similar nature, it certainly is very complete and fulfils its purpose admirably. It is a very complete little medical lexicon. Its attractive binding and thumb-index adds to its appearance.

**MANUAL OF BACTERIOLOGY.** By ROBERT MUIR, M.A., M.D., F.R.C.P., Edinburgh, Professor of Pathology in the University of Glasgow; and JAMES RITCHIE, M.A., M.D., B.Sc., Lecturer in Pathology, University of Oxford. Second Edition. New York: The Macmillan Company, 1899.

A LARGE number of smaller works on bacteriology have made their appearance during the past ten years, but the one under consideration easily ranks with the very best. The subject is presented with an accuracy of statement that will undoubtedly commend its adoption as a student's text-book. Much attention has been given to a lucid description of laboratory technic, the preparation of culture media, and microscopic methods in general, and the

student will find the book a very valuable aid in these matters.

Only those bacteria have been described whose actions are pathogenic to man and the pages are fully illustrated, mainly by reproductions from photographs. In an appendix the subjects of smallpox, hydrophobia, malarial fever, and dysentery are considered, and a short, general bibliography on bacteriology has been added. The book contains more than 500 pages, is well printed and carefully made, and its small, handy size is particularly acceptable. It is deserving of wide popularity and we heartily commend it to all interested in the subject.

## THERAPEUTIC HINTS.

**For Granular Conjunctivitis.**—BLOEBAUM recommends the association of sulphate of copper and salicylic acid in treating this affection, the granulations being destroyed as by elective action without injury to the healthy parts of the conjunctiva. Corneal ulcerations do not contraindicate the use of this combination of remedies, which are prescribed as follows:

R	Ac. salicylici	} aa . . .	gr. xv
	Cupri sulphat.		
	Cocainæ hydrochlorat.		
	Vasellini alb.		

M. Ft. unguentum. Sig. External use.

**For Gonorrheal Urethritis.**—

R	Methylene blue . . . . .	gr. xxv	
	Ol. santali.	} aa . . .	
	Oleoresinæ copaibæ		gr. xxx
	Ol. cinnamomi . . . . .		gtt. x.

M. Ft. pil. No. X. Sig. One pill three times a day.  
—Horwitz.

**For Intertrigo.**—

R	Quininæ oleat. . . . .	gr. v
	Lanolini . . . . .	3 ss
	Ol. olivæ . . . . .	3 iiss.

M. Ft. unguentum. Sig. Apply twice a day by inunction.

After use of the ointment cover the part with starch powder or with the following:

R	Ac. salicylici . . . . .	gr. xxx
	Magnesiæ . . . . .	gr. lxxx.
	Talci . . . . .	3 v.

M. Sig. Powder.

**For Impetigo of Face and Scalp in Nursing Infants.**—

R	Ac. salicylici . . . . .	gr. xv
	Bismuthi subnitrat. . . . .	3 v
	Pulv. amyli . . . . .	3 ii
	Ungt. rosæ . . . . .	3 iiss.

M. Sig. External use.

If the impetigo is of the dry squamous variety, use the ointment by inunction, frequently repeated. If moist, apply a thick coat of the ointment on gauze. Pruritus and congestion will rapidly diminish while the new, healthy epidermis forms under the ointment-crust.—Kistler.